

# Intra-industrijska razmjena između Europske unije i Zapadnog Balkana: pogled izbliza

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Valerija Botrić

# Intra-industry Trade between the European Union and Western Balkans: A Close-up

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Intra-industry Trade between the European Union  
and Western Balkans: A Close-up

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## Intra-industry Trade between the European Union and Western Balkans: A Close-up

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### **Abstract:**

After the collapse of socialism, ex-centrally planned economies underwent the transition process towards the market economy with more or less success. The now so-called Western Balkans region was additionally burdened by the war, which disrupted previously existing trading routes, contributed to the delay in the transition process and increased the gap not only between them and more advanced market economies, but also other transition economies in the region. This has significantly influenced the speed of the EU integration processes of these countries. The accession and participation on the common EU market bring additional challenges to these rather non-competitive economies. What comes into perspective when having in mind the integration prospects, is the evolution of trade between these countries and EU.

Trade patterns are used as one of the indicators of whether we should look for integrating forces between EU countries and Western Balkan countries. The countries included in the analysis are: Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Kosovo, Serbia and Montenegro. For each country in the sample, the intra-industry trade (IIT) with new and old EU member states is analyzed in total, along with horizontal and vertical trade. The analysis is performed on a 4-digit level of Combined Nomenclature (CN).

**Keywords:** Western Balkans, trade, intra-industry trade (IIT), vertical intra-industry trade (VIIT), horizontal intra-industry trade (HIIT)

**JEL classification:** F14, F15

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## Intra-industrijska razmjena između Europske unije i Zapadnog Balkana: pogled izbliza

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### **Sažetak:**

Nakon raspada socijalističkog sustava, sve su zemlje bile suočene s tranzicijskim procesom prema tržišnom gospodarstvu, koji su prolazile s više ili manje uspjeha. Zemlje Zapadnog Balkana prošle su i ratno iskustvo, koje je dodatno razorilo prethodne pravce razmjene, usporilo tranzicijske procese i povećalo jaz ne samo u odnosu na razvijene tržišne zemlje, već i u odnosu na naprednije tranzicijske zemlje u okruženju. To je utjecalo na usporavanje procesa europskih integracija tih zemalja. Sudjelovanje na zajedničkom tržištu EU donosi nove izazove tim nisko konkurentnim gospodarstvima. Pri razmatranju nadolazećih integracijskih perspektiva, nužno je uzeti u obzir postojeće trgovinske odnose.

Razmjena može predstavljati dodatni integrativni faktor između Europske unije i zemalja Zapadnog Balkana. Analiza razmjene u ovome radu provedena je za sljedeće zemlje: Albanija, Bosna i Hercegovina, Hrvatska, Makedonija, Kosovo, Srbija i Crna Gora. Za svaku je zemlju analizirana intra-industrijska razmjena (IIT) sa starim i novim EU članicama, te posebno horizontalna (HIIT) i vertikalna intra-industrijska razmjena (VIIT). Analiza je provedena na razini četiri znamenke kombinirane nomenklature.

**Ključne riječi:** Zapadni Balkan, razmjena, intra-industrijska razmjena (IIT), vertikalna intra-industrijska razmjena (VIIT), horizontalna intra-industrijska razmjena (HIIT)

**JEL klasifikacija:** F14, F15





# 1 Introduction<sup>1</sup>

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Western Balkan countries are facing many economic issues. Their common features non-exhaustively include high unemployment, government deficits, still relatively high government share in the economy, lack of domestic capital, inherited and newly created indebtedness. In general, they lack competitiveness, which has resulted in perpetuating trade deficits. Their relatively poor performance on international markets is a direct consequence of the slow implementations of the reforms on domestic product markets.

This relatively low performance is evident from the most aggregated data. Taken together, the share of Western Balkan countries in European exports in 2010 was 1.96 percent and in the imports 0.93 percent. Thus, Western Balkan trade developments are not important from the international markets' aspect, but they seem to be decisive for the development of these countries. Without intensifying trade relations, these economies might step further away from the sound economic recovery path.

The literature on trade patterns within the context of EU integration is relatively abundant for Central and Eastern European economies (Aturupane, Djankov and Hoekman, 1999; Caetano and Galego, 2007; Fidrmuc, Grozea-Helmenstein and Wörgötter, 1999; Gabrisch, 2006; Kandogan, 2003; Hoekman and Djankov, 1996; Fidrmuc, 2005; Janda and München, 2004). Similar analysis for Western Balkan countries is relatively scarcer, with some exceptions (Damijan, de Sousa and Lamotte, 2006; Kaminski and de la Rocha, 2002; Mardas and Nikas, 2008; Buturac and Teodorović, 2012; Škuflić and Botrić, 2008). There are also examples analyzing the national intra-industry trade dynamics for each of the Western Balkan countries.<sup>2</sup>

The main contribution of the present paper is that it seeks to explain the trade patterns between the European Union and Western Balkan countries on a more detailed level of analysis than it has previously been presented in the literature. Additional contribution comes from the fact that Western Balkans trade with old and new EU countries is treated separately, which has not yet been sufficiently emphasized in the literature. Finally, the analysis is performed with familiar, but less mainstream approach than is usually found in the literature.

This paper analyzes trade patterns in the following Western Balkan countries: Albania, Bosnia and Herzegovina (B&H) Croatia, Former Yugoslav Republic of Macedonia (FYRM), whenever the data permits Kosovo<sup>3</sup>, and Montenegro and Serbia as separate entities. Due to the intention to treat all the currently existing countries as separate entities, the time period for the comparative analysis of the countries' relative

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<sup>1</sup> The research to this article was sponsored by Special Projects Office, Special and Extensions Programs of the Central European University Foundation (CEUBPF). The theses explained herein are representing the own ideas of the author, but not necessarily reflect the opinion of CEUBPF.

<sup>2</sup> In the case of Croatia, see for example, Škuflić (2005) or Buturac (2008).

<sup>3</sup> Instead of Kosovo under UNSCR 1244/99 we apply simple Kosovo throughout the paper, to enhance the readability.

performance is short. Nevertheless, the analysis also enables some preliminary conclusions.

The structure of this paper is as follows. The next section presents the overall dynamics of the European Union trade with Western Balkan countries. Section 3 presents the methodology and discusses the results of the intra-industry trade between Western Balkans and EU in total, as well as disaggregated into vertical and horizontal components. Section 4 follows the similar structure in discussing marginal intra-industry trade. Section 5 presents conclusions.

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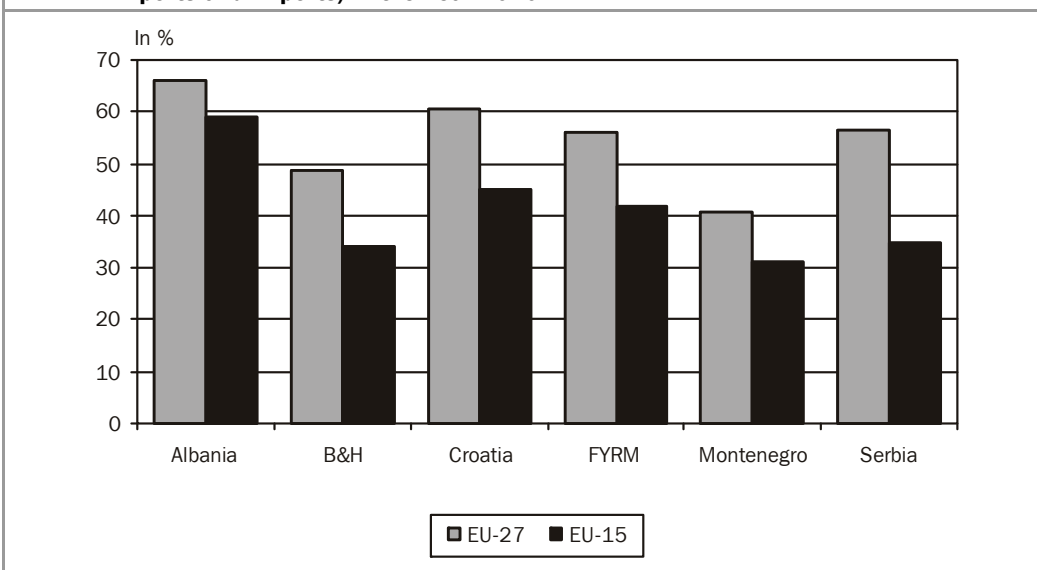
## 2 Western Balkans Trade with the European Union

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We concentrate our analysis on the trade flows between Western Balkan countries and the European Union. There are two major reasons behind this choice. The first is related to the desire to explore the potentially integrative role of the trade in the countries' road to full membership. The second is more pragmatic. Comparative analysis of Western Balkan countries on a detailed level of data aggregation is frequently obstructed by the re-developing statistical systems as a consequence of the relatively slower transition process (in comparison to Central European transition economies). Furthermore, the disintegration of former Yugoslavia implies that the available time series are relatively short - for example, Montenegro and Serbia were a single entity until 2006, and Kosovo proclaimed independence in 2008. Performing the analysis on the data obtained from the European Union enhances the probability of analyzing the comparable data across countries.

Notwithstanding these difficulties, the available data reveal that the trade with the members of the European Union represents a significant share of the overall trade in the Western Balkans. Relative importance of the trade with EU members can be seen on Figure 1. It seems that Albania has the highest share, followed by Croatia, Serbia and Macedonia (FYRM), for all of which EU-27 countries had above 50 percent share in total trade. Bosnia and Herzegovina, and Montenegro, had the least share of their trade with the EU countries in 2010.

Figure 1 **Share of the European Union in Western Balkans' International Trade (Goods Exports and Imports) in the Year 2010**



Source: *WIIW Handbook of Statistics*.

The next interesting question is whether the share of trade is improving over time. The intuition behind a positive answer would be that the integration process has created additional impulse for economic relations between the countries. But, if we look at the dynamics in the 2003-2010 period (the start of the period is related to the data availability for Bosnia and Herzegovina), then we can see that the share of trade with the EU is actually decreasing. The share of trade with EU-15 countries resembles the dynamics of here presented EU-27 (the individual data for every country are presented in Figure A1 in the Appendix A1). Thus, future integration prospects have acted adversely to additional trade creation between the Western Balkans and European Union. One of the reasons for this might be related to the reestablishment of trade routes within the Western Balkans regions, which have recently revived.

What do these countries trade with the European Union? According to the theory of comparative advantages and relative factor endowments, which can be traced back to Ricardo and then Heckscher-Ohlin, these countries would export labour intensive products as well as resource-intensive products, and import capital intensive products. The confirmation of such an assumption can already be seen from the data regularly published by the Eurostat. The data consist of the product groupings according to the detailed SITC classification, and Eurostat presents product groupings with the highest share in exports and imports. For the selected group of countries, the first two product groupings are presented in the following Table.

Country	Exports to EU		Imports from EU	
	SITC	Share in %	SITC	Share in %
Albania	1200 – fuels, mining	28.7	2400 – machinery	22.9
	2700 – other manufacturing	23.7	2300 – other semi-manufacturing	16.4
Bosnia and Herzegovina	2700 – other manufacturing	28.5	2400 – machinery	26.3
	1200 – fuels, mining	18.6	2200 – chemicals	15.5
Croatia	2400 – machinery	26.5	2400 – machinery	28.5
	1200 – fuels, mining	18.1	2200 – chemicals	16.6
FYR Macedonia	2600 – clothing	24.4	2400 – machinery	21.1
	2100 – iron, steel	23.3	2200 – chemicals	16.6
Kosovo	2100 – iron, steel	54.4	2400 – machinery	32.8
	1200 – fuels, mining	16.3	1100 – agricultural products	19.1
Montenegro	1200 – fuels, mining	80.3	2400 – machinery	32.3
	2100 – iron, steel	4.3	1100 – agricultural products	19.9
Serbia	1100 – agricultural products	17.8	2400 – machinery	30.0
	2400 – machinery	17.3	1200 – fuels, mining	15.6

Source: Eurostat.

There are a few interesting aspects of the data presented in Table 1. On a general level, it seems that the Western Balkan countries are exporting resources and labour intensive products to European Union countries, and importing machinery and more capital intensive products. This type of relation corresponds to the classical North-South trade patterns, which are in line with traditional Heckscher-Ohlin trade models that explain trade patterns between developed and developing countries. It is also interesting to note that Serbia is exporting its agricultural products to the European Union, while Kosovo and Montenegro are importing agricultural products from the European Union. Finally, there is an indication that it would be beneficial to look deeper into the trade patterns, as some product groupings appear on both sides of the trade balance sheet.

Intra-industry trade contradicts the predictions of standard trade theories which actually predict the dominance of inter-industry trade and country specializations in accordance with relative factor endowments. The existence of intra-industry trade has been first noticed between the developed economies. However, empirical literature has been able to detect intra-industry trade between developed and developing countries as well. The intra-industry trade patterns between Western Balkans and the European Union are discussed in the next section.

### 3 Intra-industry Trade between the EU and Western Balkans: Old EU vs. New EU

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Intra-industry trade is defined as the simultaneous imports and exports, recorded at a detailed level of product aggregation, within the same industry. The theoretical fundamentals for the intra-industry trade have been found in the models proposed by Balassa (1966) and Krugman (1979). Much of the literature related to intra-industry trade is devoted to the issue of measurement. Thus, many proposed methodologies exist, starting by most frequently used Grubel and Lloyd (1975) index.<sup>4</sup> Other well-known examples include Balassa (1966), Greenaway and Milner (1983), Aquino (1978), Hamilton and Kniest (1991), Greenaway, Hine, Milner and Elliott (1994), or Brühlhart (1994). Without going into details on each of these indices, it is sufficient to say that they separate the overall trade between two entities into intra-industry trade (which is trade between same industries) and inter-industry trade (which is trade between different industries).

Within the intra-industry trade, the type of products traded is particularly interesting. The whole intra-industry trade is thus further disaggregated into horizontal intra-industry trade (which is the trade of relatively close substitute products within the same industry) and vertical intra-industry trade (which is the trade of differentiated products within the same industry). The beginning of theoretical foundations for horizontal intra-industry trade can be found in Helpman and Krugman (1985), while the modeling of vertical intra-industry trade has been initiated by Caves (1981). Since then the theoretical literature has been abundant. However, since the present paper focuses on empirical results, the review of theoretical development would not have altered the discussion in the rest of the paper. Instead of reviewing the theoretical advances, we proceed with the empirical results and brief explanations of the specific methodology applied.

#### 3.1 Methodology for Estimating Intra-industry Trade

In order to examine the trade patterns between Western Balkan countries and the European Union, an overall trade has been disaggregated into the intra-industry trade and inter-industry trade. According to the methodology applied by Abd-el-Rahman (1991), Fontagné and Freudenberg (1997) and Freudenberg and Lemoine (1999), we disaggregate the overall trade into one-way trade and two-way trade, in line with the following expression:

$$\text{Trade overlap} = \frac{\text{Min}(\text{exports}, \text{imports})}{\text{Max}(\text{exports}, \text{imports})} \quad (1)$$

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<sup>4</sup> The index can be assessed with the following expression  $GL = \frac{(X_i - M_i) - |X_i - M_i|}{(X_i + M_i)} * 100$ .

The expression is evaluated at the disaggregated level of product classification. If it is above a certain threshold, then it is assumed that significant trade overlap exists and the trade is considered to be two-way (or intra-industry trade). Threshold of 10 percent, frequently used in the literature, is applied in order to avoid the possible sensitivity of the results to this parameter. The choice of this method of separating trade flows for the countries in the sample has been influenced by the previous research by Škuflić and Botrić (2008). By applying the Grubel-Lloyd indicator to South-Eastern European countries Škuflić and Botrić (2008) have detected its rather erratic movements. This paper, thus, utilizes alternative methodology in order to gain another perspective on the trade patterns of sampled countries.

The two-way trade can be further disaggregated into horizontal trade (trade in similar products) and vertical trade (trade in differentiated products). In order to distinguish the two, a standard unit value approach has been used. A ratio between unit value of exports and unit value of imports has been evaluated against a threshold according to the following expression:

$$\frac{1}{1+\alpha} \leq \frac{\textit{Unit value of exports}}{\textit{Unit value of imports}} \leq 1+\alpha \quad (2)$$

Unit values have been calculated as the ratio of the value of trade in EUR and a corresponding quantity in tons. Threshold value  $\alpha$  has been set to 15 percent, which is a standard value in the literature.

Horizontally differentiated products are those for which the evaluated ratio of unit values falls between the specified borders, implying that the differences between unit values of exports and unit values of imports for that product are small, thus making the products similar. Vertically differentiated products are those for which the unit value ratio falls outside the borders, implying that either the goods from the home market are at the lower end of the EU market (unit value ratio is below the lower boundary) or they are upmarket goods (for those whose unit value ratio exceeds  $1+\alpha$ ).

The described indicators were subsequently empirically assessed by using the Eurostat's trade database, COMEXT. The major reason for using this database is the lack of disaggregated data from the national statistics offices, which would enable comparative analysis. The original data are thus represented from the EU countries' perspective. The indicators below are, however, presented from the analyzed countries' (i.e. Western Balkan's) point of view.

Two groups of declaring countries have been made - EU-15 and EU-8. The first group consists of the old member states and for this group it was possible to obtain the longest time series of data for Western Balkan partner countries - for Albania from the year 1988; for Croatia and Bosnia and Herzegovina from the year 1992; for FYR Macedonia from the year 1993; for Kosovo, Montenegro and Serbia from the year 2005. EU-8

consists of Estonia, Latvia, Lithuania, Poland, Czech Republic, Slovakia, Hungary and Slovenia. For this group, the available data on trade statistics with the selected economies began in the year 2004, when they became EU member states. We have not included Malta and Cyprus or the two EU latecomers Bulgaria and Romania. The reason not to include the former is their relatively small share of trade with the selected countries, and the fact that they are rather specific island economies. In addition, the literature on adjustment of Central and Eastern European economies (CEEC) (to which the EU-8 countries belong to) to common European market is relatively abundant. Furthermore, CEECs' adjustment path from transition to market economies, is similar to the one of Western Balkan countries. The reason not to include Bulgaria and Romania is their ambiguity in the analyzed period - they became EU member states in 2007 and if we were to treat them as new EU member states, it would shorten the period of the analysis and comparison of new vs. old EU to only the data for 2007-2010.

The analysis is performed on the 4-digit level of Combined Nomenclature, which was assumed to be detailed enough, but not too disaggregated to disable the detection of trade overlap. The data are available with annual frequency, so the analysis is performed on the annual level, but has been averaged across certain periods for the presentation purposes.<sup>5</sup> Furthermore, the 4-digit level analysis has also been aggregated to the overall country level for the presentation purposes. Since the available data do not come from the analyzed economies, it cannot be clearly stated whether this is the argument for more or less frequent statistical errors. In addition, the structures of the economies are expected to be dramatically changing in the analyzed period, even more than the average structural changes in the globalized world, which is due to the transition process and the trade liberalization. This would enable trade creation in new, previously unavailable products, which could also contribute to the statistical errors. Having in mind significant changes in the structure of the analyzed economies (significant deindustrialization and privatization failures), more detailed level of analysis might be counter-beneficial.

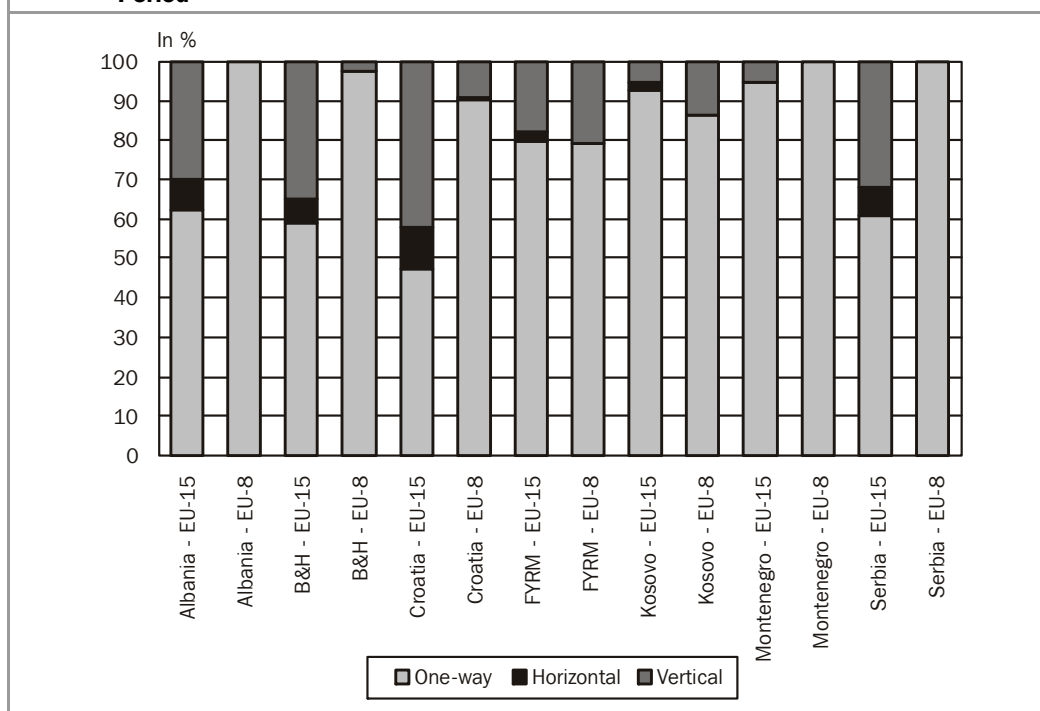
### 3.2 Intra-industry Trade: Western Balkans and EU-15

The overall results, separated by EU-15 and EU-8 are presented in the Figure 2. For each country there are two columns, the first one always representing the trade with EU-15 and the second trade with EU-8. The data are averaged for the 2005-2010 period, due to the unavailability of the data for Kosovo, Montenegro and Serbia for previous years.

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<sup>5</sup> I thank the anonymous referee for pointing to the potential misunderstanding of the results.

Figure 2 **Western Balkans Trade Patterns with EU-15 and EU-8, Average for the 2005-2010 Period**



Source: Author's estimates based on COMEXT data.

The figure reveals that in the case of trade with new EU Member States (EU-8), most of it is actually one-way trade. A noticeable share of two-way trade can be detected in case of Croatia and FYR Macedonia (and also in the case of Kosovo, but we will not offer an explanation for the Kosovo results), which have, in the analyzed period, already received the status of EU candidate countries.<sup>6</sup> The largest share of two-way trade with the old EU members can be found in the case of Croatia, which also had a largest share of horizontal trade.<sup>7</sup> Next to Croatia, a large share of two-way trade with the EU-15 countries is found in the case of Bosnia and Herzegovina, and Serbia. The smallest share of two-way trade with the old EU member states is recorded in the case of Montenegro and Kosovo. Furthermore, from the data presented it seems that two-way trade, when it was present, was mostly concentrated in the vertical trade. The largest share of vertical trade, as well as the largest share of horizontal trade is recorded for Croatia. Judging from this data, it would be safe to conclude that, of all the analyzed countries, Croatia is one of those most integrated with the EU member states.

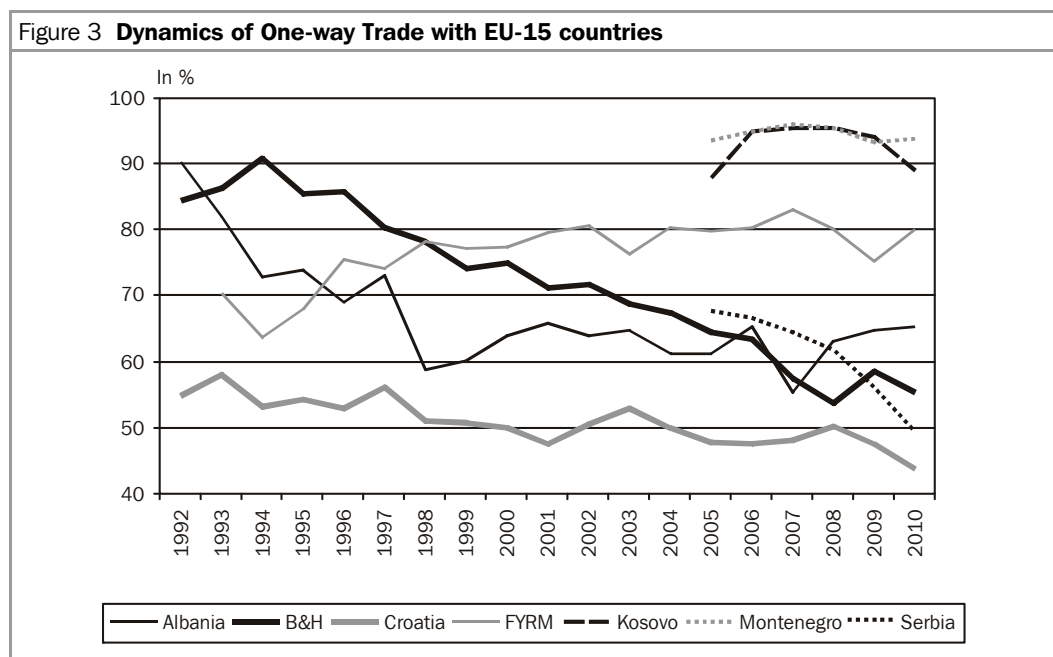
<sup>6</sup> The candidate countries are: Croatia (as of 2004), FYR Macedonia (as of 2005), Montenegro (as of 2010), Serbia (as of 2012).

<sup>7</sup> It has to be noticed that some authors conclude from such findings that the higher IIT implies lower adjustment costs, with special emphasis to labour market adjustment (Škuflić, 2005, for Croatia). However, having in mind the relative shortness of the data period analyzed in the present paper, as well as the fact that this hypothesis should be empirically validated, we would restrain from making such conclusions in the present paper and leave this issue for future research.



The fact that most of the intra-industry trade is vertically differentiated has been already found by Freudenberg and Lemoine (1999), for the trade between Central and Eastern European and European Union countries. This result is in accordance with theoretical predictions, which assume more vertical trade between developed and developing countries, than horizontal, which is believed to be more widespread in the trade of developed economies.

In order to determine whether there are any distinguished trends in the trade pattern, we also examine the dynamics of one-way trade (which is a dual image of intra-industry trade). The reason for the presentation of one-way trade is that for some countries the intra-industry trade is negligible.

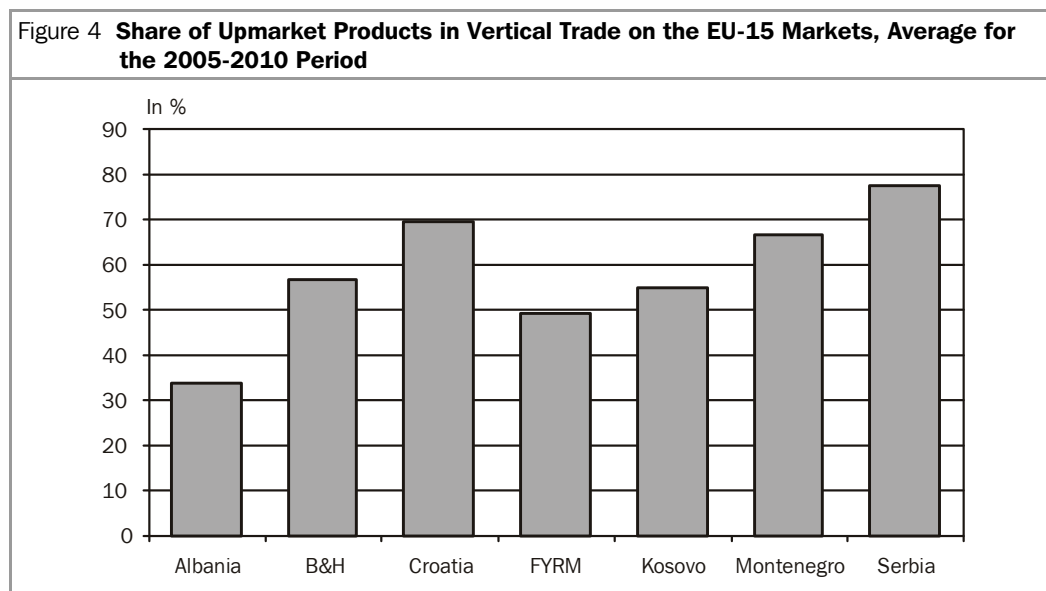


Source: COMEXT.

The dynamics of one-way trade presented in Figure 3 show that in the case of Bosnia and Herzegovina there was the largest decline in one-way trade share. This clear trend has been reversed as the immediate effect of the crisis, but it seems that it will regain its previous path. Croatia has also recorded a decline in one-way trade share, although it has been the lowest among the analyzed countries throughout the period, with a few years marking the deviations from this trend. The beginning of transition and the liberalization of trade has brought initial decline in one-way trade share for Albania. However, since 1998 it has remained rather stable, and even increased during the crisis period. The country that has actually recorded an increase of one-way trade share for the most of the analyzed period is FYR Macedonia. Before the crisis it seemed that the trend would reverse, but then the global circumstances changed and this effect did not last.

The three countries for which we can observe only the period since 2005 – Kosovo, Montenegro and Serbia – seem to have relatively different trade patterns with EU-15. On one side there is Serbia, whose one-way trade share is the lowest among the three, with strong decline of one-way trade share. On the other side are Kosovo and Montenegro, with the highest share of all the analyzed countries, with slight changes in dynamics in case of Kosovo (although with no significant trend), and an almost constant share for Montenegro.

We conducted a more detailed analysis. Vertical trade can be further disaggregated into upmarket products, for which the unit values ratio exceeds the threshold, and downmarket products. It will be interesting to see whether Western Balkan countries can actually obtain relatively higher prices on their exports examined next to the comparable imported products in the trade with the EU-15 countries. The results have been averaged across 2005-2010 period and presented in the following figure. The decision to average the data comes from the fact that the same upmarket products do not appear in the statistics every year.



Source: Author's estimates based on COMEXT data.

The data reveal that in the case of Serbia, followed by Croatia, a large share of vertical trade is in the upmarket segment. Albania and Bosnia and Herzegovina had on average traded on the lower price segment of the market. This relatively high share of upmarket products brings up the question of what these products actually are. So, the next step was to determine the vertically differentiated product for each country, with the highest unit value ratio between exports and imports during the 2005-2010 period. The results are presented in Table 2.

Country	Product
Albania	7001 - cullet and other waste and scrap of glass; glass in the mass (excl. glass in the form of powder, granules or flakes)
Bosnia and Herzegovina	93SS - confidential trade of chapter 93
Croatia	8101 - tungsten wolfram and articles thereof, n.e.s.; tungsten waste and scrap (excl. ash and residues containing tungsten)
FYR Macedonia	4103 - other raw hides and skins, fresh, or salted, dried, limed, pickled or otherwise preserved, whether or not dehaired or split (excl. those of bovine animals, equine animals, sheep and lambs, those with wool on and those of goats or kids from Yemen, Mongolia or Tibet and tanned, parchment-dressed or further prepared)
Kosovo	3502 - albumins, incl. concentrates of two or more whey proteins containing by weight > 80% whey proteins, calculated on the dry matter, albuminates and other albumin derivatives
Montenegro	4401 - fuel wood, in logs, billets, twigs, faggots or similar forms; wood in chips or particles; sawdust and wood waste and scrap, whether or not agglomerated in logs, briquettes, pellets or similar forms
Serbia	3825 - residual products of the chemical or allied industries, n.e.s.; municipal waste; sewage sludge; clinical waste, waste organic solvents, wastes of metal pickling liquors, of hydraulic fluids, brake fluids and anti-freeze fluids and other wastes from chemical or allied industries (excl. wastes containing mainly petroleum oils or oils obtained from bituminous minerals)

Source: Author's estimates based on COMEXT data.

The first intuition from the products presented in Table 2 is that these are not branded products of the countries in the region. Thus, we investigated further whether these products are a lasting component of the trade, or possibly just one-time shooting stars. Within the vertical intra-industry trade, we looked for established upmarket products, which have been traded each year during the period 2005-2010. The full report of this exercise is in the Appendix A2 of this paper. Here, we only discuss the following questions:

- how many of these products does each country have
- how many products have achieved annual growth of relative unit value (i.e. price of exports relative to imports is higher each year during the 2006-2010 period)
- what is their share in trade with EU-15
- is this share growing?

The answers to these questions have been summarized in Table 3.

Country	Number	Growing unit value	Average share in trade (in %)
Albania	14	1	2.39 stagnating
Bosnia and Herzegovina	26	0	6.26 growing
Croatia	63	0	13.31 stagnating
FYR Macedonia	12	0	2.28 stagnating
Kosovo	1	0	0.56 declining
Montenegro	1	0	0.14 growing
Serbia	48	0	10.02 stagnating

Source: Author's calculations based on COMEXT.

On a 4-digit level of CN there is a total of 1632 product groupings. This shows that the shares of those that belong to upmarket products are relatively low. Among them, those with steady annual increases in relative unit value, achieved in trading with EU-15, have been found only in the case of Albania, for product group 4016 (articles of vulcanised rubber). The share of upmarket products in total trade with EU-15 is the highest in Croatia, followed by Serbia and Bosnia and Herzegovina. Even though only a short period is observed, growing share of upmarket products has been detected just in the case of Bosnia and Herzegovina.

This confirms the intuition that Western Balkan countries are not intensifying their trade with the old EU members, neither in terms of trade volume nor in terms of product quality.

### 3.3 Intra-industry Trade: Western Balkans and EU-8

The trade patterns with EU-8 countries are quite different, although not necessarily better. As already established, most of the trade is one-way trade. The share of upmarket products in vertical trade with EU-8 countries is for most of the countries close to zero and/or highly erratic. The two countries that seem to have established at least some form of upmarket trading are Croatia and Serbia. For the latter, 2009-2010 average of upmarket products in vertical trade amounts to 35 percent. For Croatia, 2007-2010 average seems to be around 20 percent. However, this is highly unstable. Within the vertical trade of Western Balkan countries with the EU-8 we were unable to find any stable upmarket product.

Country	Product
Albania	-
Bosnia and Herzegovina	9504 - articles for funfair, table or parlour games, incl. pintables, billiards, special tables for casino games and automatic bowling alley equipment
Croatia	3923 - articles for the conveyance or packaging of goods, of plastics; stoppers, lids, caps and other closures, of plastics
FYR Macedonia	-
Kosovo	-
Montenegro	-
Serbia	8479 - machines and mechanical appliances having individual functions, not specified or included elsewhere in this chapter; parts thereof

*Source: Author's estimates based on COMEXT data.*

From this evidence it seems clear that the trade flows between the Western Balkan countries and new EU members have not yet been fully established. These results also warn against the analysis on the aggregate level between Western Balkans and EU-27.

## 4 Marginal Intra-industry Trade

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We examine the trade patterns from yet another perspective. The reason is that the criticism of the Grubel-Lloyd index and similar methodology, emphasises the static nature of the indicator, i.e. it reveals the trade patterns at a specific point in time. In order to deal with this, the concept of marginal intra-industry trade was introduced. A few alternatives have been proposed in the literature (Hamilton and Kniest, 1991; Greenaway, Hine, Milner and Elliott, 1994), but for the purpose of the present paper we will rely on the marginal intra-industry trade index as proposed by Brühlhart (1994), since it has some other desirable interpretation properties, useful for the comparison of sampled countries.

### 4.1 Methodology Explained

Brühlhart (1994) actually proposes two marginal intra-industry trade (MIIT) indices, out of which we will proceed with the calculation of the following:

$$MIIT = \frac{\Delta X - \Delta M}{|\Delta X| + |\Delta M|} \quad (3)$$

The calculated index can take values ranging between -1 and 1. The desirable feature of this indicator is that there are two segments of information that can be obtained. The first one is the share of intra-industry trade (which is similar to previous analysis), and the closer the MIIT value is to zero, the higher is the share of intra-industry trade. The values of 1 and -1 refer to the special cases where all the trade is inter-industry trade (or one-way trade). The other information relates to sectoral performance at the disaggregated level, as we can observe the change in exports and imports in relation to each other. Positive values of the index indicate that exports are expanding at the expense of imports, which would imply strong performance of domestic industry.

Having that in mind, we exclude from further analysis first those products where the value of MIIT is either -1 or 1. This is declared to be the case of inter-industry trade. Next, within the remaining products we will look for products that are experiencing strong domestic performance in trade patterns between the EU-15 and EU-8, separately.

### 4.2 Marginal Intra-industry Trade: Western Balkans and EU-15

Based on the described methodology, we first present the results for the trade patterns between Western Balkans and EU-15. Similar to the analysis presented in Section 3, the results have been averaged over a short period of time, due to the same reasons. Out of 1632 product groupings, we wanted to identify those belonging to the representative

category, and to examine their share in trade with the respective EU countries. The results are presented in the following tables.

Country	Average number	Average share in trade (in %)
Albania	828 oscillating	50.92
Bosnia and Herzegovina	791 declining	47.37
Croatia	731 oscillating	46.82
FYR Macedonia	794 oscillating	47.62
Kosovo	768 growing	68.38
Montenegro	764 oscillating	65.41
Serbia	705 growing	32.05

*Source: Author's calculations based on COMEXT.*

As can be seen from the data, there is a relatively high share of MIIT, which corresponds to the high share of one-way trade indicator. In all of the cases the trade overlap methodology identified a larger share of one-way trade than MIIT method. The respective levels of countries are also rather different, with Serbia having the smallest share of MIIT. However, Serbia is also the one with the growing number of products, so this might be the result of some under-reporting at the beginning of the period in question.

Country	Average number	Average share in trade (in %)
Albania	131 oscillating	21.44
Bosnia and Herzegovina	177 growing	25.13
Croatia	260 oscillating	23.89
FYR Macedonia	165 oscillating	26.79
Kosovo	37 growing	4.70
Montenegro	52 growing	16.06
Serbia	192 growing	28.87

*Source: Author's calculations based on COMEXT.*

The comparative data for products with strong domestic performance are presented in Table 6. It can be seen that their number is much smaller than the number of inter-industry trade products. Additionally, their share in trade is relatively small. This reveals the low competitiveness of the domestic industry, and is a clear confirmation of the Western Balkan trade problems, specifically when we take into consideration that we have included all the products that have the MIIT range between zero and 1. If we wanted to include only those that belong more decisively to intra-industry trade (i.e. MIIT close to zero), the share of products with positive competitiveness properties would be even smaller.

What is even more problematic, is the fact that similar situation has persisted over a longer period of time. By examining dynamics of the share of products with strong domestic performance in the overall trade no clear patterns emerged. This might have been expected for the countries with relatively short time period analyzed (Kosovo, Montenegro, Serbia), but the same is true for other countries for which almost two decades of data exist.

Similar to the analysis of stable upmarket products, we have tried to identify those products that had strong domestic performance each year in the period 2005-2010. This has been found only for Croatia and only for one product grouping:

- 1212 (locust beans, seaweeds and other algae, sugar beet and sugar cane, fresh, chilled, frozen or dried, whether or not ground; fruit stones and kernels and other vegetable products, incl. unroasted chicory roots of the variety *cichorium intybus sativum*, of a kind used primarily for human consumption, n.e.s.)

### 4.3 Marginal Intra-industry Trade: Western Balkans and EU-8

The same exercise has been repeated for the trade with EU-8. First the inter-industry trade share has been analyzed, which is presented in Table 7.

Country	Average number	Average share in trade (in %)
Albania	15 growing	96.08
Bosnia and Herzegovina	37 oscillating	99.57
Croatia	136 oscillating	73.68
FYR Macedonia	47 oscillating	79.06
Kosovo	14 growing	80.53
Montenegro	11 oscillating	100
Serbia	88 growing	77.70

Source: Author's calculations based on COMEXT.

These results are also expected, as they confirm large share of inter-industry trade between Western Balkan countries and New Member States. Generally, they are close to the previous indicator obtained by trade overlap methodology, with the exception of Croatia and Serbia. For both countries, the trade overlap methodology identified a larger share of one-way trade. Whatever the method, the trade pattern between EU-8 and Western Balkans seems to behave mostly according to the comparative advantage theory.

Next, we proceed with the identification of the products with strong domestic performance in the trade between Western Balkans and EU-8. The results are presented in Table 8.

Country	Average number	Average share in trade (in %)
Albania	0.16	0.00
Bosnia and Herzegovina	0.16	0.00
Croatia	9.50	16.07
FYR Macedonia	0.50	12.36
Kosovo	0.50	9.21
Montenegro	-	-
Serbia	3.83	20.24

Source: Author's calculations based on COMEXT.

In this case, there is an extremely small number of products that could be identified as those where Western Balkan countries are recording positive results. Their share in trade with EU-8 is relatively negligible. There is one exception, where there is misbalance between the number of products and the average share in trade. This is the case of Serbia, whose data for the years 2006 and 2007 contain positive developments in the segment of:

- 8504 (electrical transformers, static converters, e.g. rectifiers, and inductors; parts thereof)

The analysis here confirms previous one-way vs. two-way trade partition and reveals that a large amount of the trade between Western Balkan countries and EU-8 is actually inter-industry trade. When comparing the results between New and Old EU, it can be noticed that Western Balkans trade with New Europe in a much smaller number of product groupings. Even though we are able to analyze a relatively short period, there seem to be no identified clear trends on expanding the trade between EU-8 and Western Balkans, in terms of number of product groupings traded.

## 5 Conclusions

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Overall trade performance of Western Balkans countries is weak. Trade between the Western Balkans and the European Union is at relatively low levels. In addition, the dynamics on general level do not reveal positive trends. Yet, intensifying trade, and possibly intensifying trade with more demanding markets, might be of crucial importance for the future developments of Western Balkan countries.

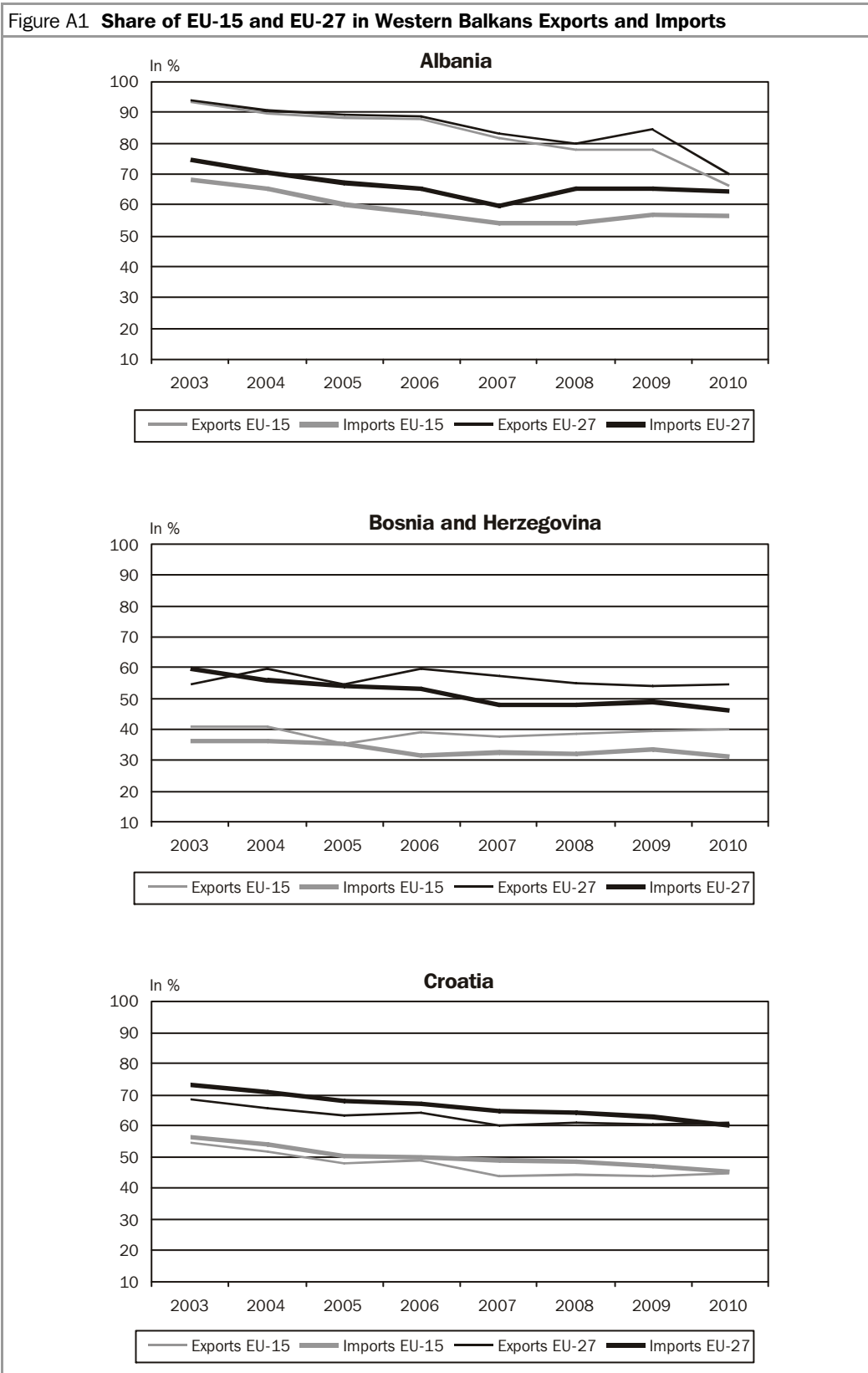
With that in mind, this paper has examined trade patterns between the European Union and Western Balkan countries in details. The overall trade has been disaggregated into one-way trade, horizontal intra-industry trade and vertical intra-industry trade. Upmarket products have been identified, and their share in trade analyzed. Marginal intra-industry trade methodology has been applied to identify the products with strong domestic performance, and their relative share in trade.

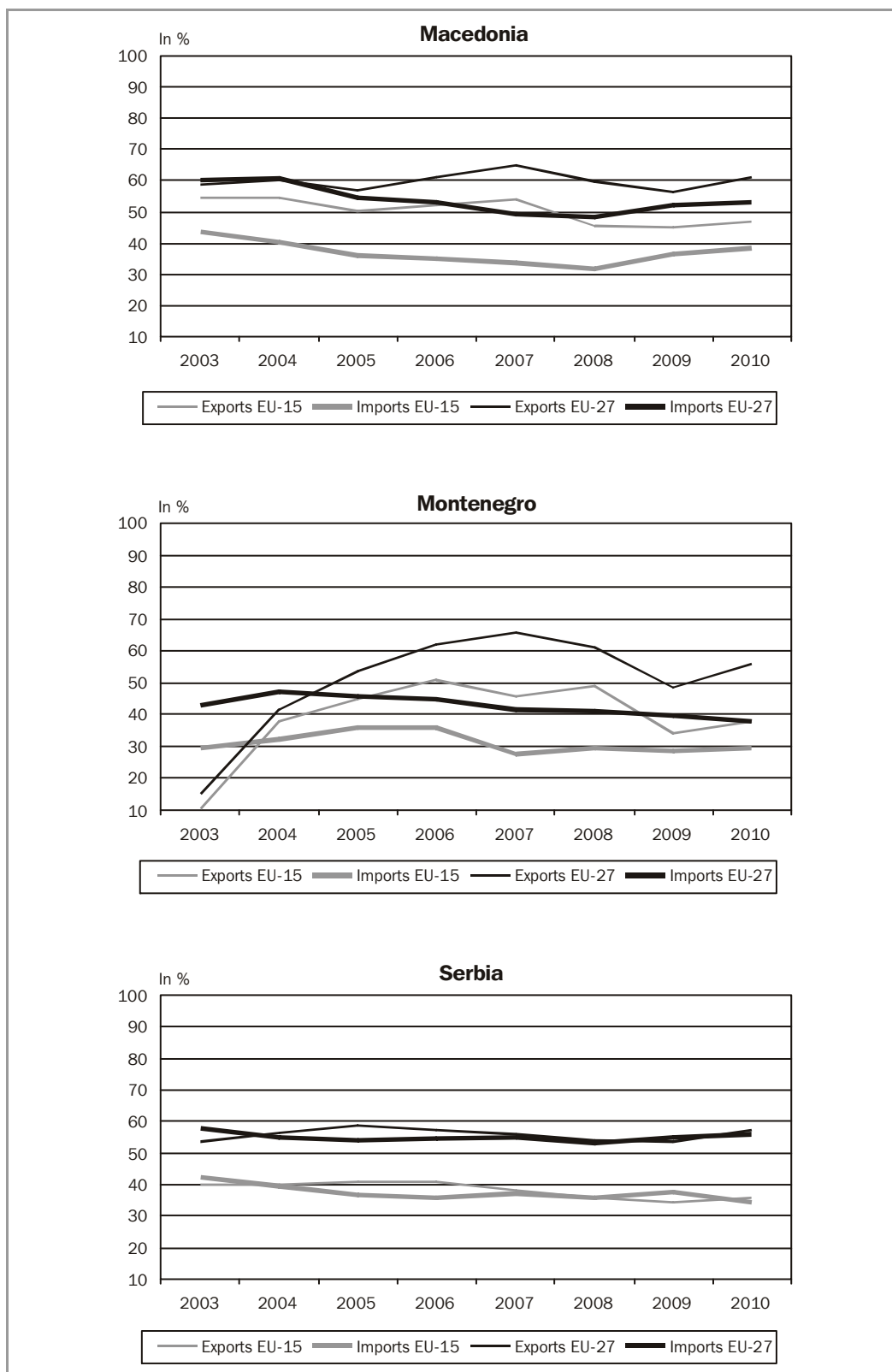


The main conclusion is that the level and dynamics of existing trade patterns do not give too many reasons for optimism. Trade of the countries with the EU is quite low, the share of intra-industry trade is also relatively low, and the structure of products traded is relatively unfavourable and not improving. The simple continuance of current trends would most likely lead to nominal stagnation, and real divergence from the main European trading routes. In order to integrate these countries in the common European market in the future, a significant adjustment should take place.

We have also reached an important note for future policy and research efforts. Different trade patterns of the Western Balkan countries with the New and the Old Member states have been established. Western Balkans trade with New EU on a much smaller scale, smaller level of product complexity, and with much simpler trading arrangements. Clearly New Europe does not equal Old Europe, looking from the Western Balkans' perspective.

## Appendix A1





Source: WIIW.

## Appendix A2

Table A2 “Established” Upmarket Products in the Period 2005-2010	
Country	Product/ CN 4-digit
Albania	<ol style="list-style-type: none"> <li>1. 0807 - melons, incl. watermelons, and papaws papayas, fresh</li> <li>2. 0910 - ginger, saffron, turmeric curcuma, thyme, bay leaves, curry and other spices (excl. pepper of the genus piper, fruit of the genus capsicum or of the genus pimenta, vanilla, cinnamon, cinnamon tree flowers, cloves [whole fruit], clove stems, nutmeg, mace, cardamoms, seeds of anise, badian, fennel, coriander, cumin and caraway, and juniper berries)</li> <li>3. 2516 - granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a square or rectangular shape (excl. in the form of granules, chippings or powder, or already with the characteristics of setts, curb stones and flagstones, and monumental or building stone of an apparent specific gravity of <math>\geq 2.5</math>)</li> <li>4. 2811 - inorganic acids and inorganic oxygen compounds of non-metals (excl. hydrogen chloride hydrochloric acid, chlorosulphuric acid, sulphuric acid, oleum, nitric acid, sulphonitric acids, diphosphorus pentaoxide, phosphoric acid, polyphosphoric acids, oxides of boron and boric acids)</li> <li>5. <u>4016 - articles of vulcanised rubber (excl. hard rubber), n.e.s.</u></li> <li>6. 4104 - tanned or crust hides and skins of bovine incl. buffalo or equine animals, without hair on, whether or not split (excl. further prepared)</li> <li>7. 6802 - monumental or building stone, natural (excl. slate), worked, and articles; mosaic cubes etc. of natural stone, incl. slate, whether or not on a backing; artificially coloured granules, chippings, powder, of natural stone, incl. slate (excl. setts, curbstones, flagstones; articles of fused basalt and of fired steatite; jewellery, clocks, lamps and parts; buttons, chalks, original sculptures and statuary)</li> <li>8. 6912 - tableware, kitchenware, other household articles and toilet articles, of ceramics other than porcelain or china (excl. baths, bidets, sinks and similar sanitary fixtures, statuettes and other ornamental articles, pots, jars, carboys and similar receptacles for the conveyance or packing of goods, and coffee grinders and spice mills with receptacles made of ceramics and working parts of metal)</li> <li>9. 7322 - radiators for central heating, non-electrically heated, and parts thereof, of iron or steel; air heaters and hot-air distributors, incl. distributors which can also distribute fresh or conditioned air, non-electrically heated, incorporating a motor-driven fan or blower, and parts thereof, of iron or steel</li> <li>10. 8302 - base metal mountings, fittings and similar articles suitable for furniture, doors, staircases, windows, blinds, coachwork, saddlery, trunks, chests, caskets or the like; base metal hat-racks, hat-pegs, brackets and similar fixtures; castors with mountings of base metal; automatic door closers of base metal</li> <li>11. 8503- parts suitable for use solely or principally with electric motors and generators, electric generating sets and rotary converters, n.e.s.</li> <li>12. <b>9019 - mechano-therapy appliances; massage apparatus; psychological aptitude-</b></li> </ol>

	<p><b>testing apparatus; ozone therapy, oxygen therapy, aerosol therapy, artificial respiration or other therapeutic respiration apparatus</b></p> <p>13. 9401- seats, whether or not convertible into beds, and parts thereof, n.e.s. (excl. medical, surgical, dental or veterinary of heading 9402)</p> <p>14. 9503 - toys (excl. wheeled toys designed to be ridden by children, dolls' carriages and dolls representing only human beings); reduced-size scale recreational models, working or not; puzzles of all kinds</p>
Bosnia and Herzegovina	<p>1. 0604- foliage, branches and other parts of plants, without flowers or flower buds, and grasses, mosses and lichens, of a kind suitable for bouquets or for ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared</p> <p>2. 1211 - plants and parts of plants, incl. seeds and fruits, of a kind used primarily in perfumery, medicaments or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered</p> <p>3. 1905 - bread, pastry, cakes, biscuits and other bakers' wares, whether or not containing cocoa; communion wafers, empty cachets of a kind suitable for pharmaceutical use, sealing wafers, rice paper and similar products</p> <p>4. 2007- jams, fruit jellies, marmalades, fruit or nut purée and fruit or nut pastes, obtained by cooking, whether or not containing added sugar or other sweetening matter</p> <p>5. 2204 - wine of fresh grapes, incl. fortified wines; grape must, partly fermented and of an actual alcoholic strength of &gt; 0,5% vol or grape must with added alcohol of an actual alcoholic strength of &gt; 0,5% vol</p> <p>6. 3005 - wadding, gauze, bandages and the like, e.g. dressings, adhesive plasters, poultices, impregnated or covered with pharmaceutical substances or put up for retail sale for medical, surgical, dental or veterinary purposes</p> <p><b>7. 4104 - tanned or crust hides and skins of bovine incl. buffalo or equine animals, without hair on, whether or not split (excl. further prepared)</b></p> <p>8. 4415 - packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood (excl. containers specially designed and equipped for one or more modes of transport)</p> <p>9. 4818 - toilet paper and similar paper, cellulose wadding or webs of cellulose fibres, of a kind used for household or sanitary purposes, in rolls of a width ≤ 36 cm, or cut to size or shape; handkerchiefs, cleansing tissues, towels, tablecloths, serviettes, napkins for babies, tampons, bed sheets and similar household, sanitary or hospital articles, articles of apparel and clothing accessories, of paper pulp, paper, cellulose wadding or webs of cellulose fibres</p> <p>10. 4819 - cartons, boxes, cases, bags and other packing containers, of paper, paperboard, cellulose wadding or webs of cellulose fibres, n.e.s.; box files, letter trays, and similar articles, of paperboard of a kind used in offices, shops or the like</p> <p>11. 4820 - registers, account books, notebooks, order books, receipt books, letter pads, memorandum pads, diaries and similar articles, exercise books, blotting pads, binders, folders, file covers, manifold business forms, interleaved carbon sets and other articles of stationery, of paper or paperboard; albums for samples or for collections and book covers, of paper and paperboard</p> <p>12. 6214 - shawls, scarves, mufflers, mantillas, veils and similar articles (excl. knitted or</p>

	<p>crocheted)</p> <p>13. 7306 - tubes, pipes and hollow profiles e.g., open seam or welded, riveted or similarly closed, of iron or steel (excl. of cast iron, seamless tubes and pipes and tubes and pipes having internal and external circular cross-sections and an external diameter of &gt; 406,4 mm)</p> <p>14. 7318 - screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers, incl. spring washers, and similar articles, of iron or steel (excl. lag screws, stoppers, plugs and the like, threaded)</p> <p>15. 7604 - bars, rods and profiles, of aluminium, n.e.s.</p> <p>16. 8301 - padlocks and locks key, combination or electrically operated, of base metal; clasps and frames with clasps, incorporating locks, of base metal; keys for any of the foregoing articles, of base metal</p> <p>17. 8403 - central heating boilers, non-electric; parts thereof (excl. vapour generating boilers and superheated water boilers of heading 8402)</p> <p>18. 8412 - engines and motors (excl. steam turbines, internal combustion piston engine, hydraulic turbines, water wheels, gas turbines and electric motors); parts thereof</p> <p>19. 8413 - pumps for liquids, whether or not fitted with a measuring device (excl. ceramic pumps and secretion aspirating pumps for medical use and medical pumps carried on or implanted in the body); liquid elevators (excl. pumps); parts thereof</p> <p>20. 8421 - centrifuges, incl. centrifugal dryers (excl. those for isotope separation); filtering or purifying machinery and apparatus, for liquids or gases; parts thereof (excl. artificial kidneys)</p> <p>21. 8425 - pulley tackle and hoists (other than skip hoists); winches and capstans; jacks</p> <p>22. 8428 - lifting, handling, loading or unloading machinery, e.g. lifts, escalators, conveyors, teleferics (excl. pulley tackle and hoists, winches and capstans, jacks, cranes of all kinds, mobile lifting frames and straddle carriers, works trucks fitted with a crane, fork-lift trucks and other works trucks fitted with lifting or handling equipment)</p> <p>23. 8431 - PARTS suitable for use solely or principally with the machinery of heading 8425 to 8430, n.e.s.</p> <p>24. 8466 - parts and accessories suitable for use solely or principally with the machine tools of heading 8456 to 8465, incl. work or tool holders, self-opening die heads, dividing heads and other special attachments for machine tools, n.e.s.; tool holders for any type of tool for working in the hand</p> <p>25. 8483 - transmission shafts, incl. camshafts and crankshafts, and cranks; bearing housings and plain shaft bearings for machines; gears and gearing; ball or roller screws, gear boxes and other speed changers, incl. torque converters; flywheels and pulleys, incl. pulley blocks, clutches and shaft couplings, incl. universal joints; parts thereof</p> <p>26. 8511 - electrical ignition or starting equipment of a kind used for spark-ignition or compression-ignition internal combustion engines, e.g. ignition magnetos, magneto-dynamos, ignition coils, sparking plugs, glow plugs and starter motors; generators, e.g. dynamos and alternators, and cut-outs of a kind used in conjunction with such engines; parts thereof</p>
Croatia	<p>1. 0302 - fish, fresh or chilled (excl. fish fillets and other fish meat of heading 0304)</p> <p>2. 0910 - fish, fresh or chilled (excl. fish fillets and other fish meat of heading 0304)</p>

3. 2207 - undenatured ethyl alcohol of an alcoholic strength of  $\geq 80\%$ ; ethyl alcohol and other spirits, denatured, of any strength
4. 2306 - oil cake and other solid residues, whether or not ground or in the form of pellets, resulting from the extraction of vegetable fats or oils (excl. from soya-bean oil and groundnut oil)
5. **2308 - acorns, horse-chestnuts, marc and other vegetable materials and vegetable waste, vegetable residues and by-products of a kind used in animal feeding, whether or not in the form of pellets, n.e.s.**
6. 3105 - mineral or chemical fertilisers containing two or three of the fertilising elements nitrogen, phosphorus and potassium; other fertilisers (excl. pure animal or vegetable fertilisers or mineral or chemical nitrogenous, phosphatic or potassic fertilisers); animal, vegetable, mineral or chemical fertilisers in tablets or similar forms or in packages of a gross weight of  $\leq 10$  kg
7. 3823 - industrial monocarboxylic fatty acids; acid oils from refining; industrial fatty alcohols
8. 3919 - self-adhesive plates, sheets, film, foil, tape, strip and other flat shapes, of plastics, whether or not in rolls (excl. floor, wall and ceiling coverings of heading 3918)
9. 3922 - baths, shower-baths, sinks, washbasins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware, of plastics
10. 3923 - articles for the conveyance or packaging of goods, of plastics; stoppers, lids, caps and other closures, of plastics
11. 4010 - conveyor or transmission belts or belting, of vulcanised rubber
12. 4016 - articles of vulcanised rubber (excl. hard rubber), n.e.s.
13. 4404 - hoop wood; split poles; piles, pickets and stakes of wood, pointed but not sawn lengthwise; wooden sticks, roughly trimmed but not turned, bent or otherwise worked, for the manufacture of walking sticks, umbrellas, tool handles or the like; chip wood, wooden slats and strips and the like (excl. hoop wood cut to length and chamfered; brush surrounds and shoe trees)
14. 4415 - packing cases, boxes, crates, drums and similar packings, of wood; cable-drums of wood; pallets, box pallets and other load boards, of wood; pallet collars of wood (excl. containers specially designed and equipped for one or more modes of transport)
15. 4417 - tools, tool bodies, tool handles, broom or brush bodies and handles, of wood; boot or shoe lasts and shoetrees, of wood (excl. forms used in the manufacture of hats, forms of heading 8480, other machines and machine components, of wood)
16. 4418 - builders' joinery and carpentry, of wood, incl. cellular wood panels, assembled parquet panels, shingles and shakes, of wood (excl. plywood panelling, blocks, strips and friezes for parquet flooring, not assembled, and pre-fabricated buildings)
17. 4419 - tableware and kitchenware, of wood (excl. interior fittings, ornaments, cooperage products, tableware and kitchenware components of wood, brushes, brooms and hand sieves)
18. 4421 - other articles of wood, n.e.s.
19. 4819 - cartons, boxes, cases, bags and other packing containers, of paper, paperboard, cellulose wadding or webs of cellulose fibres, n.e.s.; box files, letter trays, and similar articles, of paperboard of a kind used in offices, shops or the like
20. 4820 - registers, account books, notebooks, order books, receipt books, letter pads,

	<p>memorandum pads, diaries and similar articles, exercise books, blotting pads, binders, folders, file covers, manifold business forms, interleaved carbon sets and other articles of stationery, of paper or paperboard; albums for samples or for collections and book covers, of paper and paperboard</p> <p>21. 4823 - paper, paperboard, cellulose wadding and webs of cellulose fibres, in strips or rolls of a width <math>\leq 36</math> cm, in rectangular or square sheets of which no side <math>&gt; 36</math> cm in the unfolded state, or cut to shape other than rectangular or square, and articles of paper pulp, paper, paperboard, cellulose wadding or webs or cellulose fibres, n.e.s.</p> <p>22. 4901 - printed books, brochures and similar printed matter, whether or not in single sheets (excl. periodicals and publications which are essentially devoted to advertising)</p> <p>23. 5602 - felt, whether or not impregnated, coated, covered or laminated, n.e.s.</p> <p>24. 6910 - ceramic sinks, washbasins, washbasin pedestals, baths, bidets, water closet pans, flushing cisterns, urinals and similar sanitary fixtures (excl. soap dishes, sponge holders, tooth-brush holders, towel hooks and toilet paper holders)</p> <p>25. 6913 - statuettes and other ornamental ceramic articles, n.e.s.</p> <p>26. 7010 - carboys, bottles, flasks, jars, pots, phials, ampoules and other containers, of glass, of a kind used for the conveyance or packing of goods, preserving jars, stoppers, lids and other closures, of glass (excl. glass envelopes and containers, with vacuum insulation, perfume atomizers, flasks, bottles etc. for atomizers)</p> <p>27. 7306 - tubes, pipes and hollow profiles e.g., open seam or welded, riveted or similarly closed, of iron or steel (excl. of cast iron, seamless tubes and pipes and tubes and pipes having internal and external circular cross-sections and an external diameter of <math>&gt; 406,4</math> mm)</p> <p>28. 7307 - tube or pipe fittings e.g. couplings, elbows, sleeves, of iron or steel</p> <p>29. 7318 - screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers, incl. spring washers, and similar articles, of iron or steel (excl. lag screws, stoppers, plugs and the like, threaded)</p> <p>30. 7320 - springs and leaves for springs, of iron or steel (excl. clock and watch springs, springs for sticks and handles of umbrellas or parasols, shock absorbers and torque rod or torsion bar springs of section 17)</p> <p>31. 7321 - stoves, ranges, grates, cookers, incl. those with subsidiary boilers for central heating, barbecues, braziers, gas rings, plate warmers and similar non-electric domestic appliances, and parts thereof of iron or steel (excl. boilers and radiators for central heating, geysers and hot water cylinders)</p> <p>32. 7325 - articles of iron or steel, cast, n.e.s.</p> <p>33. 7604 - bars, rods and profiles, of aluminium, n.e.s.</p> <p>34. 7608 - aluminium tubes and pipes (excl. hollow profiles)</p> <p>35. 8204 - hand-operated spanners and wrenches, incl. torque meter wrenches (excl. tap wrenches), of base metal; interchangeable spanner sockets, with or without handles, of base metal</p> <p>36. 8305 - fittings for loose-leaf binders or files, letter clips, letter corners, paper clips, indexing tags and similar office articles, of base metal (excl. drawing pins and clasps for books or registers); staples in strips, e.g. for use in offices, upholstery and packaging, of base metal</p>
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37. 8409 - parts suitable for use solely or principally with internal combustion piston engine of heading 8407 or 8408
38. 8411 - turbojets, turbo propellers and other gas turbines
39. 8414 - air or vacuum pumps (excl. gas compound elevators and pneumatic elevators and conveyors); air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; parts thereof
40. 8417 - industrial or laboratory furnaces and ovens, non-electric, incl. incinerators (excl. drying ovens and ovens for cracking operations)
41. 8431 - parts suitable for use solely or principally with the machinery of heading 8425 to 8430, n.e.s.
42. 8442 - dishwashing machines; machinery for cleaning or drying bottles or other containers; machinery for filling, closing, sealing or labelling bottles, cans, boxes, bags or other containers; machinery for capsuling bottles, jars, tubes and similar containers; other packing or wrapping machinery, incl. heat-shrink wrapping machinery; machinery for aerating beverages; parts thereof
43. 8448 - auxiliary machinery for use with machines of heading 8444, 8445, 8446 or 8447, e.g. dobbies, jacquards, automatic stop motions, shuttle changing mechanisms; parts and accessories suitable for use solely or principally with the machines of this heading or of heading 8444, 8445, 8446 or 8447, e.g. spindles and spindle flyers, card clothing, combs, extruding nipples, shuttles, healds and heald-frames, hosiery needles
44. 8451 - machinery (excl. of heading 8450) for washing, cleaning, wringing, drying, ironing, pressing incl. fusing presses, bleaching, dyeing, dressing, finishing, coating or impregnating textile yarns, fabrics or made-up textile articles and for applying paste to the base fabric or other support used in the manufacture of floor coverings like linoleum; machines for reeling, unreeling, folding, cutting or pinking textile fabrics; parts thereof
45. 8453 - machinery for preparing, tanning or working hides, skins or leather or for making or repairing footwear or other articles of hides, skins or leather (excl. drying machines, spray guns, machines for the dehairing of pigs, sewing machines and general purpose presses); parts thereof
46. 8462 - machine tools, incl. presses, for working metal by forging, hammering or die-stamping; machine tools, incl. presses, for working metal by bending, folding, straightening, flattening, shearing, punching or notching; presses for working metal or metal carbides (excl. machines of chapters 8456 to 8461)
47. 8474 - machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid, incl. powder or paste, form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand; parts thereof
48. 8477 - machinery for working rubber or plastics or for the manufacture of products from these materials, not specified or included elsewhere in this chapter, parts thereof
49. 8479 - machines and mechanical appliances having individual functions, not specified or included elsewhere in this chapter; parts thereof
50. 8481 - taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, incl. pressure-reducing valves and thermostatically controlled valves; parts thereof

	<p>51. 8483 - transmission shafts, incl. camshafts and crankshafts, and cranks; bearing housings and plain shaft bearings for machines; gears and gearing; ball or roller screws, gear boxes and other speed changers, incl. torque converters; flywheels and pulleys, incl. pulley blocks, clutches and shaft couplings, incl. universal joints; parts thereof</p> <p>52. 8501 - electric motors and generators (excl. generating sets)</p> <p>53. 8504 - electrical transformers, static converters, e.g. rectifiers, and inductors; parts thereof</p> <p>54. 8515 - electric, incl. electrically heated gas, laser or other light or photon beam, ultrasonic, electron beam, magnetic pulse or plasma arc soldering, brazing or welding machines and apparatus, whether or not capable of cutting; electric machines and apparatus for hot spraying of metals, metal carbides or cermets; parts thereof (excl. guns for spraying hot materials of heading 8424)</p> <p>55. 8607 - parts of railway or tramway locomotives or rolling stock, n.e.s.</p> <p>56. 8708 - railway or tramway track fixtures and fittings (excl. sleepers of wood, concrete or steel, sections of track and other track fixtures not yet assembled and railway or tramway track construction material); mechanical, incl. electromechanical, signalling, safety or traffic control equipment for railways, tramways, roads, inland waterways, parking facilities, port installations or airfields; parts of the foregoing</p> <p>57. 8716 - trailers and semi-trailers; other vehicles, not mechanically propelled (excl. railway and tramway vehicles); parts thereof, n.e.s.</p> <p>58. 9013 - liquid crystal devices not constituting articles provided for more specifically in other heading; lasers (excl. laser diodes); other optical appliances and instruments not elsewhere specified in chapter 90</p> <p>59. 9032 - regulating or controlling instruments and apparatus (excl. taps, cocks and valves of heading 8481)</p> <p>60. 9401 - seats, whether or not convertible into beds, and parts thereof, n.e.s. (excl. medical, surgical, dental or veterinary of heading 9402)</p> <p>61. 9403 - furniture and parts thereof, n.e.s. (excl. seats and medical, surgical, dental or veterinary furniture)</p> <p>62. 9404 - mattress supports (excl. spring interiors for seats); articles of bedding and similar furnishing, e.g. mattresses, quilts, eiderdowns, cushions, pouffes and pillows, fitted with springs or stuffed or internally filled with any material or of cellular rubber or plastics, whether or not covered (excl. pneumatic or water mattresses and pillows, blankets and covers)</p> <p>63. 9607 - slide fasteners and parts thereof</p>
FYRM Macedonia	<p>1. 2103 - sauce and preparations therefore; mixed condiments and mixed seasonings; mustard flour and meal, whether or not prepared, and mustard</p> <p>2. 2516 - granite, porphyry, basalt, sandstone and other monumental or building stone, whether or not roughly trimmed or merely cut, by sawing or otherwise, into blocks or slabs of a square or rectangular shape (excl. in the form of granules, chippings or powder, or already with the characteristics of setts, curbstones and flagstones, and monumental or building stone of an apparent specific gravity of <math>\geq 2,5</math>)</p> <p>3. 4303 - articles of apparel, clothing accessories and other furskin articles (excl. gloves made of leather and furskin, footwear and headgear and parts thereof, and goods of chapter 95, e.g., toys, games and sports equipment)</p>

	<p>4. 4707 - recovered waste and scrap paper or paperboard (excl. paper wool)</p> <p>5. 4805 - other paper and paperboard, uncoated, in rolls of a width &gt; 36 cm or in square or rectangular sheets with one side &gt; 36 cm and the other side &gt; 15 cm in the unfolded state, not worked other than as specified in note 3 to this chapter, n.e.s.</p> <p>6. 6006 - fabrics, knitted or crocheted, of a width of &gt; 30 cm (excl. warp knit fabrics incl. those made on galloon knitting machines, those containing by weight <math>\geq</math> 5% of elastomeric yarn or rubber thread, and pile fabrics, incl. long pile, looped pile fabrics, labels, badges and similar articles, and knitted or crocheted fabrics, impregnated, coated, covered or laminated)</p> <p>7. 6910 - ceramic sinks, washbasins, washbasin pedestals, baths, bidets, water closet pans, flushing cisterns, urinals and similar sanitary fixtures (excl. soap dishes, sponge holders, tooth-brush holders, towel hooks and toilet paper holders)</p> <p>8. 7307 - tube or pipe fittings e.g. couplings, elbows, sleeves, of iron or steel</p> <p><b>9. 8474 - machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid, incl. powder or paste, form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand; parts thereof</b></p> <p>10. 8507 - electric accumulators, incl. separators therefore, whether or not square or rectangular; parts thereof (excl. spent and those of unhardened rubber or textiles)</p> <p>11. 8516 - electric instantaneous or storage water heaters and immersion heaters; electric space-heating apparatus and soil-heating apparatus; electro-thermic hairdressing apparatus, e.g. hairdryers, hair curlers and curling tong heaters, and hand dryers; electric smoothing irons; other electro-thermic appliances of a kind used for domestic purposes; electric heating resistors (other than those of heading 8545); parts thereof</p> <p>12. 9401 - seats, whether or not convertible into beds, and parts thereof, n.e.s. (excl. medical, surgical, dental or veterinary of heading 9402)</p>
Kosovo	<p>1. 2204 - wine of fresh grapes, incl. fortified wines; grape must, partly fermented and of an actual alcoholic strength of &gt; 0,5% vol or grape must with added alcohol of an actual alcoholic strength of &gt; 0,5% vol</p>
Montenegro	<p>1. 2204 - wine of fresh grapes, incl. fortified wines; grape must, partly fermented and of an actual alcoholic strength of &gt; 0,5% vol or grape must with added alcohol of an actual alcoholic strength of &gt; 0,5% vol</p>
Serbia	<p>1. 1206 - sunflower seeds, whether or not broken</p> <p>2. 2005 - other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen (excl. preserved by sugar, and tomatoes, mushrooms and truffles)</p> <p>3. 2008 - fruits, nuts and other edible parts of plants, prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit (excl. prepared or preserved with vinegar, preserved with sugar but not laid in syrup, and jams, fruit jellies, marmalades, fruit purée and pastes, obtained by cooking)</p> <p>4. 2507 - kaolin and other kaolinic clays, whether or not calcined</p> <p><b>5. 2804 - hydrogen, rare gases and other non-metals</b></p>

	<p>6. 3301 - essential oils, whether or not terpeneless, incl. concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, fixed oils, waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils</p> <p>7. 3823 - industrial monocarboxylic fatty acids; acid oils from refining; industrial fatty alcohols</p> <p>8. 3921 - plates, sheets, film, foil and strip, of plastics, reinforced, laminated, supported or similarly combined with other materials, or of cellular plastic, unworked or merely surface-worked or merely cut into squares or rectangles (excl. self-adhesive products, floor, wall and ceiling coverings of heading 3918)</p> <p>9. 3926 - articles of plastics and articles of other materials of heading 3901 to 3914, n.e.s.</p> <p>10. 4009 - tubes, pipes and hoses, of vulcanised rubber other than hard rubber, with or without their fittings, e.g. joints, elbows, flanges</p> <p>11. 4104 - tanned or crust hides and skins of bovine incl. buffalo or equine animals, without hair on, whether or not split (excl. further prepared)</p> <p>12. 4408 - sheets for veneering, incl. those obtained by slicing laminated wood, for plywood or for other similar laminated wood and other wood, sawn lengthwise, sliced or peeled, whether or not planed, sanded, spliced or end-jointed, of a thickness of <math>\leq 6</math> mm</p> <p>13. 4412 - plywood, veneered panel and similar laminated wood (excl. sheets of compressed wood, hollow-core composite panels, parquet panels or sheets, inlaid wood and sheets identifiable as furniture components)</p> <p>14. 4810 - paper and paperboard, coated on one or both sides with kaolin china clay or other inorganic substances, with or without a binder, and with no other coating, whether or not surface-coloured, surface-decorated or printed, in rolls or in square or rectangular sheets, of any size (excl. all other coated papers and paperboards)</p> <p>15. 5607 - twine, cordage, ropes and cables, whether or not plaited or braided and whether or not impregnated, coated, covered or sheathed with rubber or plastics</p> <p>16. 6001 - pile fabrics, incl. long pile fabrics and terry fabrics, knitted or crocheted</p> <p>17. 6110 - jerseys, pullovers, cardigans, waistcoats and similar articles, knitted or crocheted (excl. wadded waistcoats)</p> <p>18. 6203 - men's or boys' suits, ensembles, jackets, blazers, trousers, bib and brace overalls, breeches and shorts (excl. knitted or crocheted, wind-jackets and similar articles, separate waistcoats, tracksuits, ski suits and swimwear)</p> <p>19. 6205 - men's or boys' shirts (excl. knitted or crocheted, nightshirts, singlets and other vests)</p> <p>20. 6211 - tracksuits, ski suits, swimwear and other garments, n.e.s. (excl. knitted or crocheted)</p> <p>21. 6302 - bedlinen, table linen, toilet linen and kitchen linen of all types of textile materials (excl. floorcloths, polishing cloths, dishcloths and dusters)</p> <p>22. 6402 - footwear with outer soles and uppers of rubber or plastics (excl. waterproof footwear of heading 6401, orthopaedic footwear, skating boots with ice or roller skates attached, and toy footwear)</p> <p>23. 6403 - footwear with outer soles of rubber, plastics, leather or composition leather and uppers of leather (excl. orthopaedic footwear, skating boots with ice or roller skates attached, and toy footwear)</p>
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<p>24. 6806 - slag-wool, rock-wool and similar mineral wools; exfoliated vermiculite, expanded clays, foamed slag and similar expanded mineral materials; mixtures and articles of heat-insulating, sound-insulating or sound absorbing mineral materials (excl. articles of light concrete, asbestos, asbestos-cement, cellulose fibre-cement or the like, mixtures and other articles of or based on asbestos, and ceramic products)</p> <p>25. 6910 - ceramic sinks, washbasins, washbasin pedestals, baths, bidets, water closet pans, flushing cisterns, urinals and similar sanitary fixtures (excl. soap dishes, sponge holders, tooth-brush holders, towel hooks and toilet paper holders)</p> <p>26. 7306 - tubes, pipes and hollow profiles e.g., open seam or welded, riveted or similarly closed, of iron or steel (excl. of cast iron, seamless tubes and pipes and tubes and pipes having internal and external circular cross-sections and an external diameter of &gt; 406,4 mm)</p> <p>27. 7318 - screws, bolts, nuts, coach screws, screw hooks, rivets, cotters, cotter pins, washers, incl. spring washers, and similar articles, of iron or steel (excl. lag screws, stoppers, plugs and the like, threaded)</p> <p>28. 7321 - stoves, ranges, grates, cookers, incl. those with subsidiary boilers for central heating, barbecues, braziers, gas rings, plate warmers and similar non-electric domestic appliances, and parts thereof of iron or steel (excl. boilers and radiators for central heating, geysers and hot water cylinders)</p> <p>29. 7326 - articles of iron or steel, n.e.s. (excl. cast articles)</p> <p>30. 7604 - bars, rods and profiles, of aluminium, n.e.s.</p> <p>31. 8403 - central heating boilers, non-electric; parts thereof (excl. vapour generating boilers and superheated water boilers of heading 8402)</p> <p>32. 8409 - parts suitable for use solely or principally with internal combustion piston engine of heading 8407 or 8408</p> <p>33. 8412 - engines and motors (excl. steam turbines, internal combustion piston engine, hydraulic turbines, water wheels, gas turbines and electric motors); parts thereof</p> <p>34. 8474 - machinery for sorting, screening, separating, washing, crushing, grinding, mixing or kneading earth, stone, ores or other mineral substances, in solid, incl. powder or paste, form; machinery for agglomerating, shaping or moulding solid mineral fuels, ceramic paste, unhardened cements, plastering materials or other mineral products in powder or paste form; machines for forming foundry moulds of sand; parts thereof</p> <p>35. 8482 - ball or roller bearings (excl. steel balls of heading 7326); parts thereof</p> <p>36. 8483 - transmission shafts, incl. camshafts and crankshafts, and cranks; bearing housings and plain shaft bearings for machines; gears and gearing; ball or roller screws, gear boxes and other speed changers, incl. torque converters; flywheels and pulleys, incl. pulley blocks, clutches and shaft couplings, incl. universal joints; parts thereof</p> <p>37. 8529 - parts suitable for use solely or principally with transmission and reception apparatus for radio-telephony, radio-telegraphy, radio-broadcasting, television, television cameras, still image video cameras and other video camera recorders, radar apparatus, radio navigational aid apparatus or radio remote control apparatus, n.e.s.</p> <p>38. 8531 - electric sound or visual signalling apparatus, e.g. bells, sirens, indicator panels, burglar or fire alarms (excl. those for cycles, motor vehicles and traffic signalling); parts thereof</p>
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	<p>39. 8608 - railway or tramway track fixtures and fittings (excl. sleepers of wood, concrete or steel, sections of track and other track fixtures not yet assembled and railway or tramway track construction material); mechanical, incl. electromechanical, signalling, safety or traffic control equipment for railways, tramways, roads, inland waterways, parking facilities, port installations or airfields; parts of the foregoing</p> <p>40. 8609 - containers, incl. containers for the transport of fluids, specially designed and equipped for carriage by one or more modes of transport</p> <p>41. 8708 - parts and accessories for tractors, motor vehicles for the transport of ten or more persons, motor cars and other motor vehicles principally designed for the transport of persons, motor vehicles for the transport of goods and special purpose motor vehicles of heading 8701 to 8705, n.e.s.</p> <p>42. 9106 - time of day recording apparatus and apparatus for measuring, recording or otherwise indicating intervals of time, with clock or watch movement or with synchronous motor, e.g. time-registers and time recorders (excl. clocks of heading 9101 to 9105)</p> <p>43. 9303 - firearms and similar devices which operate by the firing of an explosive charge, e.g. sporting shotguns and rifles, muzzle-loading firearms, very pistols and other devices designed to project signal flares only, pistols and revolvers for firing blank ammunition, captive-bolt humane killers and line-throwing guns (excl. revolvers and pistols of heading 9302 and military weapons)</p> <p>44. 9401 - seats, whether or not convertible into beds, and parts thereof, n.e.s. (excl. medical, surgical, dental or veterinary of heading 9402)</p> <p>45. 9403 - furniture and parts thereof, n.e.s. (excl. seats and medical, surgical, dental or veterinary furniture)</p> <p>46. 9404 - mattress supports (excl. spring interiors for seats); articles of bedding and similar furnishing, e.g. mattresses, quilts, eiderdowns, cushions, pouffes and pillows, fitted with springs or stuffed or internally filled with any material or of cellular rubber or plastics, whether or not covered (excl. pneumatic or water mattresses and pillows, blankets and covers)</p> <p>47. 9405 - lamps and lighting fittings, incl. searchlights and spotlights, and parts thereof, n.e.s.; illuminated signs, illuminated nameplates and the like having a permanently fixed light source, and parts thereof, n.e.s.</p> <p>48. 9603 - brooms, brushes, incl. brushes constituting parts of machines, appliances or vehicles, hand-operated mechanical floor sweepers, not motorised, mops and leather dusters; prepared knots and tufts for broom or brush making; paint pads and rollers; squeegees of rubber or similar flexible materials</p>
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*Note: **Bold** represents the highest absolute ration of the unit values for each country within the products that appear each year in the statistics, italics underlined represents the monotonically growing unit values in the analyzed period.*  
*Source: Author's estimates based on COMEXT data.*

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