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COMPETITIVENESS, TRADE WITH THE EU AND LABOUR MARKETS: CHALLENGES FOR THE WESTERN BALKANS

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Abstract

This paper focuses on the relationship between exporting and the labour markets of the Western Balkan economies within a macroeconomic and microeconomic framework. Within the macroeconomic framework we investigate the Western Balkan countries' evolution of the bilateral intra-industry trade share with European Monetary Union members and compare this with the differences in bilateral unit labour cost dynamics. The microeconomic analysis rests on enterprise-level cross section data collected during the crisis period and investigates whether exporters help to create additional jobs in the region in comparison to entrepreneurs oriented towards national market. The results show that trade patterns between Western Balkan economies and EMU trading partners did not exhibit any significant changes in trend. On the other hand, it seems that during the recession period most Western Balkan economies adjusted their unit labour costs, probably in order to boost competitiveness. Microeconomic analysis revealed that, although there are some positive differences between exporters and non-exporters, exporters do not create additional employment.

JEL classification codes: *F15, F16*

Key words: *intra-industry trade, labour market, Western Balkan countries*

1. INTRODUCTION

Although many policy recommendations advocate the necessity of increasing competitiveness, in particular for the post-transition economies of the Western Balkan region (Sanfey, Milatović and Krešić 2016), the issue of how to measure the competitiveness of an economy is not univocally resolved. Altomonte and Békés (2016) provide a recent overview of the competitiveness issue in the European context, emphasizing that competitiveness rests on the firms' endeavours, while those few with outstanding productivity results become leaders for a sector or entire economy. There are, however, differences between policy-driven competitiveness and within-firm driven competitiveness determinants.

The countries analysed here – Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia[1], Kosovo[2], Montenegro and Serbia – are all post-transition economies that have expressed interest in joining the European Union[3]. Thus, for these

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economies, competitiveness is frequently addressed within the context of overall economic restructuring during transition, catching-up towards the level of development achieved by European market economies and the capabilities of individual firms to compete according to newly introduced market principles. In that context, trade, especially intra-industry trade, has an important role in the process of increasing competitiveness, but also as an indicator of the degree of integration and convergence with the EU.

It has been argued that requirements for increased competitiveness exert negative effects on the demand for labour, as well as create pressure to reduce labour-induced costs. Thus, firms are inclined to accommodate by trying to reduce wages, shed labour or suppress demand. These practices are expected to be more frequent during an economic downturn. However, countries may adopt different policies in dealing with these issues, so a comparative approach might be beneficial in gaining additional insight into these important processes.

In this paper we focus on the relationship between exporting and the labour market in both macroeconomic and microeconomic frameworks. The main aim of the paper is to empirically investigate trade patterns and unit labour cost evolution, in particular in the context of the European Union accession of the Western Balkan economies. To that end, two complementary approaches have been used in order to gain additional insights. Within the macroeconomic framework we investigate the Western Balkan countries' evolution of the bilateral intra-industry trade share with European Monetary Union (EMU) members and compare this with the differences in bilateral unit labour cost dynamics. The analysis covers the 2005-2013 period and is subsequently disaggregated into pre-crisis and crisis periods in order to investigate whether patterns have changed due to the adverse effects that had widespread effects on the world economy. The microeconomic analysis rests on enterprise-level cross section data collected in the period during/aftermath of the crisis and investigates whether exporters help to create additional jobs in the region in comparison to entrepreneurs oriented towards national market.

The structure of the paper is as follows. The next section contains a brief literature review, while section 3 presents the data sources as well as the basic concepts used for the indicators in the empirical analysis. Section 4 is focused on the results of the analysis: section 4.1 discusses results on the macroeconomic level, while section 4.2 presents and discusses the estimates on the individual-firm level. The last section summarizes the main conclusions.

2. BRIEF LITERATURE REVIEW

The Western Balkan countries are small economies that have expressed aspirations to join the European Union. Berglof (2015) calls this "an outside anchor effect of EU accession", which he argues is extremely important for the ongoing reform process, in particular in the Western Balkan countries in comparison to other European transition economies. The integration presents many challenges to a (post)transition economy required to adopt many market regulating mechanisms in a relatively short time (Bjelić 2015). The expected benefits of integration are foreseen, relying on theoretical models, in integration-related trade that is expected to emerge from increased product variety. This will subsequently increase consumers' utility, as well as competitiveness pressures that will induce firms to engage in more efficient behaviour (Helpman and Krugman 1985). On the other hand, it could be foreseen that the internal restructuring due to increased competition in the domestic market will result in the closing down of relatively non-competitive firms (Melitz 2003). We can also foresee a case where the effect will be entirely shifted to the reduction of labour costs, without the closing down of enterprises (Davis and Harrigan 2011).

Trade integration between the EU and the (post) transition economies of the Western Balkans has been less often discussed in the literature than the trade integration of Central and Eastern European countries (Fidrmuc 2000; Bussière, Fidrmuc and Schnatz 2005; Ferto 2007; Grančay, Šumilo and Weinhardt 2015). Most research on trade between Western Balkan countries and the EU concludes that trade, even though it is rising, is still at relatively low levels (Botrić 2012; World Bank 2008) and that the 2008 economic crisis negatively affected their trade integration with the EU (Bjelić, Jaćimović and Tašić 2013).

However, it has been argued that it is not the volume of the trade that is crucial, but the nature of trade patterns that ultimately dictate the overall benefits of integration (Frankel and Rose 1997; Frankel and Rose 1998). In cases where intra-industry trade gains momentum within integration-induced trade increases, the relatively low adjustment costs of production factor reallocation are expected through a smooth adjustment process. Such a scenario is seldom witnessed in integration among economically unequal partners. Since the economies of the Western Balkans are less developed than those of their EMU trading partners, we can envisage that the adjustment will be less smooth. Nevertheless, whether integration induces low adjustment costs in the case of the Western Balkan (post)transition economies is a question that deserves empirical verification.

3. DATA AND METHODOLOGY

As indicated in the introduction, the approach in this paper relies on both (standard) macroeconomic and microeconomic considerations. In the case of the macro-view, we start with the nature of bilateral trading patterns with European Union members. The question is: what is the extent of intra-industry trade, or in other words trade in similar products within the same industry, in the overall trade between partners? The methodology applied relies on a standard approach developed by Abd-el-Rahman (1991), Fontagné and Freudenberg (1997), or Freudenberg and Lemoine (1999), according to the expression that assesses whether there are simultaneous exports and imports (trade overlap) within the same industry:

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

The expression is evaluated at the disaggregated level of product classification (8-digit Combined Nomenclature and by using the Eurostat's COMEXT database). If it is above a certain threshold, then it is assumed that a significant trade overlap exists and the trade is considered to be two-way (or intra-industry trade). Although studies explore different thresholds for the evaluating expression (1), we apply the relatively standard value of 10 percent to distinguish between intra- and inter-industry trade. We did not want to explore the issue of different thresholds in order to avoid discussion of the implications of the possible sensitivity of the results to this parameter.

The identification of the adjustment mechanism relies also on the precise measurement issues related to the appropriate intra-industry trade dynamics and/or those related to adequate labour market changes. Literature offers a variety of methodological approaches. Brülhart, Elliott and Lindley (2006) suggest measuring on the individual employee level sectoral and occupational distance indicator within the manufacturing sector. Some studies have used industry employment change as an indicator of adjustment cost (Brülhart and Elliott 1998; Greenaway, Hine and Wright 1999), while others suggested using a job turnover indicator (Brülhart 2000; Andersson, Gustafsson and Lundberg 2000). In our macroeconomic approach we relate the evolution of trade patterns to the overall development of unit labour costs. Thus, our aim is not directly related to testing a smooth adjustment hypothesis, but rather to illustrate the evolution of the pattern in Western Balkan economies. Our unit labour cost measure is expressed as the growth of wages in a Western Balkan country relative to the growth of wages in a trading partner, divided by the same change of productivity, or:

$$ulc_{i,j,t} = \frac{\frac{wage_i}{wage_{i_{t-1}}} / \frac{wage_j}{wage_{j_{t-1}}}}{\frac{prod_i}{prod_{i_{t-1}}} / \frac{prod_j}{prod_{j_{t-1}}}} \quad (2)$$

where i refers to the Western Balkan country, and j denotes the trading partner EU country. There are a few possible outcomes from the previous expression that deserve attention:

- If the ulc indicator is higher than one – wage growth in the Western Balkan country is exceeding productivity growth higher than in a comparable European Union country
- If the ulc indicator is equal to one – relative unit labour costs in both countries are moving in the same direction
- If the ulc indicator is lower than one – the relative unit labour cost growth in the Western Balkan country is slower than that of the European Union country, indicating the increased competitiveness of the Western Balkan country.

Since both wages and productivity influence this dynamics, it is important to consider the specific features of Western Balkan economies in that respect. The following non-exhaustive list of potential correlations has to be considered:

- Relative wage changes. Competitiveness pressures can influence employers' decisions to make adjustment in labour costs either by making employment or wage changes. This is particularly important if the strategy to ensure competitiveness relies on the price and not the quality of the product. The analysis in this paper includes an indicator of relative change in the growth rate of EUR-wages in Western Balkan country to the growth rate of EUR-wages in EU trading partner. Since the underlying assumption is that trading on the European market will also involve pricing decisions in EUR, the relevant labour cost decision made by employers includes exchange rates.
- Relative changes in productivity. Employment decisions, particularly in industry, are strongly under the influence of productivity changes. If there are significant productivity improvements due to technological changes, it is very likely that reduction in employment will occur and/or shift in demand towards high-skill labour. This effect can be supported with the relocation of specific phases of production from more to less developed economies. So, within the European Union, the FDI supported relocation of production has been associated with job loss in old member states in comparison to new member states.

Discussing the role of exporting firms for an economy has produced vast volumes of literature (Bernard and Jensen 1995; Doms and Jensen 1998) where it has been established that exporting firms on average have higher productivity and are able to reward their employees with higher wages. The different outcomes of exporting firms have been found also in other, non-US economies (Clerides, Lach and Tybout 1998; Mayer and Ottaviano 2007). The specific focus in this paper is on the ability of exporting firms to create employment.

There are many possible reasons why the answer to this question is not straightforward. The pressures related to integration effects, suppressed or changing demand due to economic crisis, the institutional setup of the domestic labour market and other factors might disrupt the usual job creation process within (exporting) firms. We seek the answer to this question by relying on microeconometric analysis.

The firm-level empirical strategy in the present paper relies on the Business Environment and Enterprise Performance Survey (BEEPS V) conducted by the European Bank for Reconstruction and Development (EBRD) and World Bank data[4]. These data are collected in 30 countries and refer to the time period from 2012 to 2013, but in the empirical analysis we focus only on the data from Western Balkan economies. The difference between the suggested macroeconomic and microeconomic approaches is that our macroeconomic approach enables inspection of the dynamic evolution of trading relationship through time, while our microeconomic approach rests on the cross-section data of the sample during the crisis period. There might be some questions whether the 2012-2013 period can still be dubbed a crisis, since some of the countries in the sample have already recorded positive overall growth rates. Even though the economic crisis started in most Western Balkan countries in 2008 and was most pronounced in 2009, the consequences were still present years after 2008. Economic instability in particular intensified in 2012 due to the sovereign debt crisis in the EU, which was manifested in markedly increased credit default swaps. Hence we consider the period of collecting the data for BEEPS V a crisis period. The main research question that we want to address with the microeconomic segment of the analysis is to reveal whether exporting companies are more likely to generate additional employment than non-exporting companies. To that end, we rely on propensity score matching methods and analyse whether exporters and non-exporters that share a number of similar characteristics have different outcomes in times of employment growth.

Propensity score matching relies on the probability of participation, in our case participation in export activities, given the set of characteristics X (Blundell and Costa Dias, 2008). We can define:

$$P(X) = P(d = 1 \mid X) \tag{3}$$

where $P(X)$ is the probability of participation, which is usually called the propensity score, and X is the set of analysed characteristics. In order to estimate the average treatment effect of the treated group, we used nearest neighbour matching and kernel matching.

4. RESULTS OF THE MACROECONOMIC AND MICROECONOMIC ANALYSES

4.1. Results of the macroeconomic analysis: trade patterns - general dynamics and European Union accession prospects

The Eurostat data on the exports of accession countries to the European Union in the period 2006-2015 reveals a distinctive pattern, with most countries experiencing a dip in the year 2009 (Figure 1). A similar pattern occurs when the data of overall exports are considered. However, even though the European Union appears to be the preferred export destination for most of the countries, the data presented in Figure 1 seems to show that neither Montenegro nor Kosovo have directed their exports toward European markets,

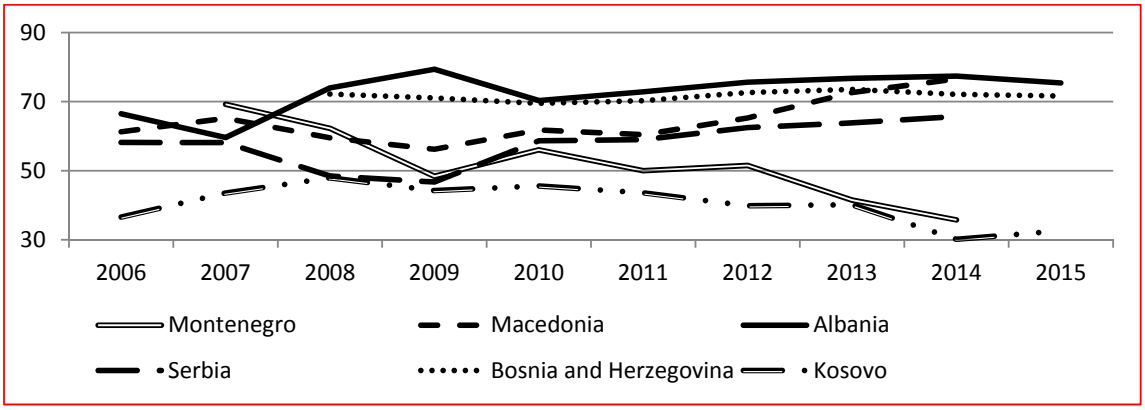
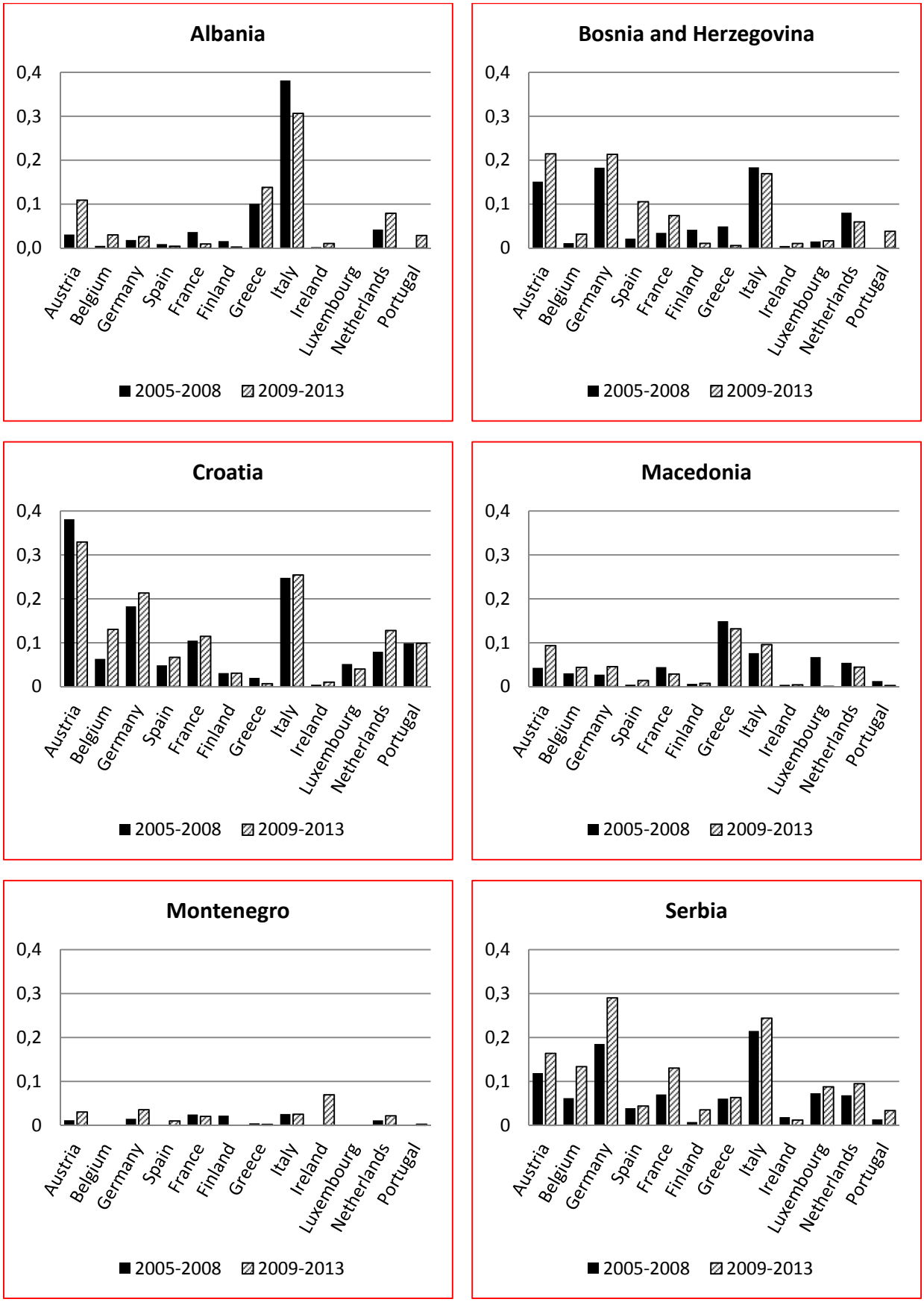


Figure 1: Share of exports to EU-28 in total exports, in percent

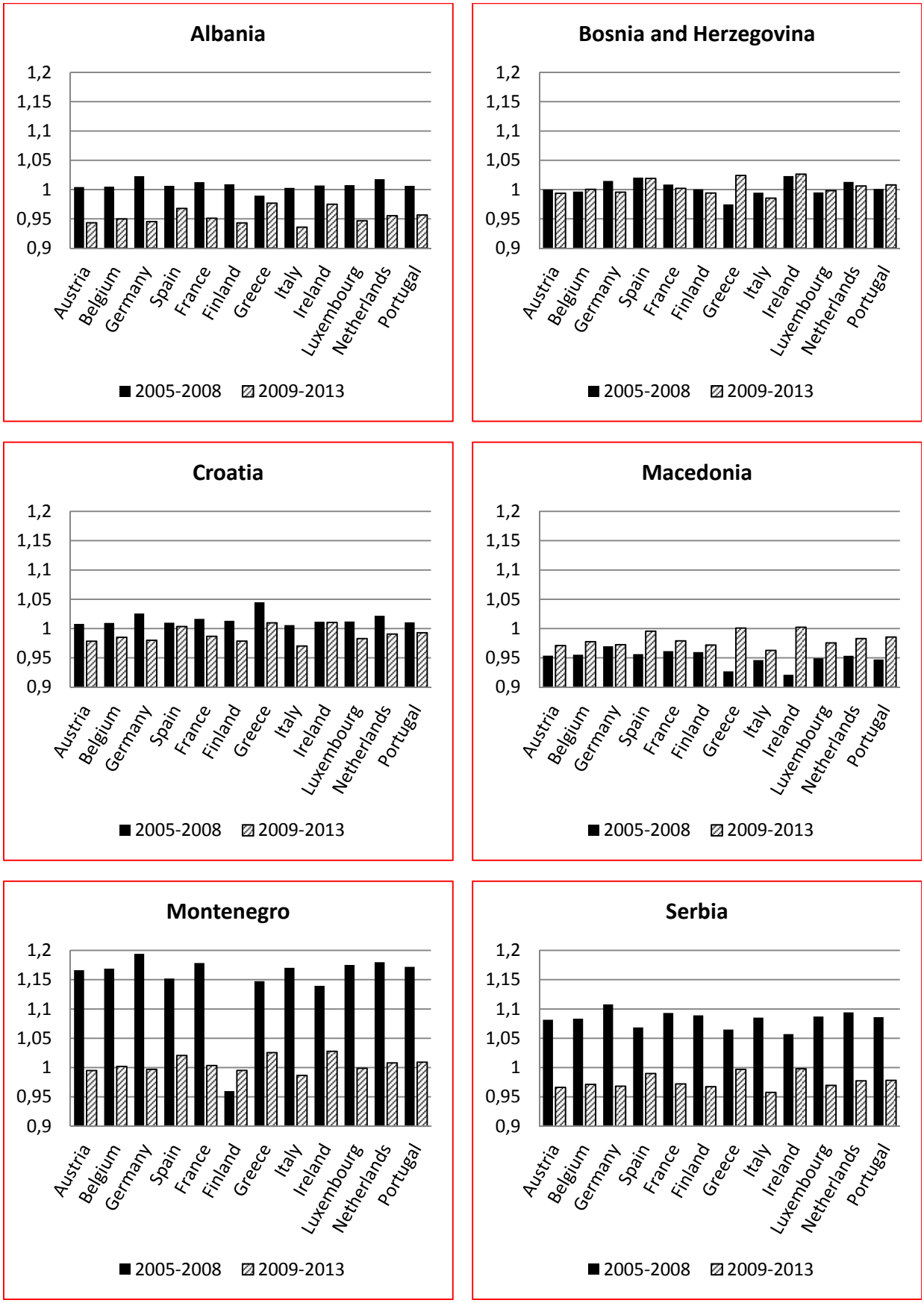
Source: Eurostat.

Figure 2: Share of intra-industry trade in total trade between partners



Source: authors' calculations based on COMEXT data.

Figure 3: Unit labour cost changes between partners



Source: authors' calculations based on WIIW and Eurostat data.

despite the fact that demand has regained its strength after the crisis, while Macedonia and Serbia increased the orientation of their exports towards the European Union.

In order to investigate the issue of the EU as the preferred export destination for Western Balkan countries, we focus on bilateral intra-industry trade patterns between each individual Western Balkan country and an EMU member. The reason that we focus only on the EMU members is to postpone the discussion on exchange rate differentials, which could be important determinants of trade dynamics. We focus on two aspects. The first is the share of intra-industry trade in the overall trade, which enables a comparative analysis between different Western Balkan countries with respect to their bilateral trading partners. The second aspect is related to the differences in the share of intra-industry trade before and after the crisis. Details are presented in Figure 2.

The data shows that Montenegro, followed by Macedonia, has the lowest shares of intra-industry trade with most of the analysed EU trading partners. Albania has a very distinctive relationship with one trading partner – Italy. For Croatia, Bosnia and Herzegovina and Serbia, the highest share of intra-industry trade is achieved with Austria, Germany and Italy, which are traditionally their important trading partners. However, in all of the cases the share of intra-industry trade is lower than 50 percent, implying that inter-industry trade dominates the overall structure of trade. Thus, the trade patterns between Western Balkan countries and their EU bilateral partners resemble a North-South trading pattern, in which it is assumed that the less developed country exports labour-intensive products and imports capital-intensive products.

Concerning the differences in trade patterns in the pre-crisis and crisis periods, there are no significant differences between the two periods between the analysed countries, but differences entirely depend on the relative economic conditions in the trading partners. For example, the share of intra-industry trade between Austria and Croatia, the only country in the sample that had been in recession until the end of the sample period, has decreased in the crisis period, while it has increased between Austria and all other Western Balkan countries.

If Western Balkan countries are mostly exporting labour intensive products into the European Union, then their relative competitiveness should be correlated with the evolution of unit labour costs. Thus, we investigate whether there is a correlation between unit labour cost differentials between bilateral trading partners and the intra-industry trade. To that purpose, we first present the unit labour costs calculated as relative wages divided by the relative productivity growth according to expression 2. If the indicator is above 1, then the unit labour cost in a Western Balkan country is increasing more than in their bilateral trading partner, which adversely affects their competitiveness. As in the previous case, we are again interested in the differences between the pre-crisis and crisis periods.

The data clearly show that there are significant changes in unit labour costs between partners in the pre-crisis and crisis periods. Most Western Balkan countries have seriously adjusted their relative unit labour cost growth in the crisis period, in particular those that had higher unit labour cost growth than their EU trading partners in the pre-crisis period. There are two exceptions related to countries that had less or similar unit labour costs growth with their trading partners prior to the crisis – Bosnia and Herzegovina and Macedonia did not adjust their unit labour cost growth in the crisis period downwards, and for Macedonia we can even notice a relative increase. The question is whether there is a link at the overall economy level between trade patterns and changes in unit labour costs. The results of the correlation exercise are presented in the following table.

Table 1: Correlation between the intra-industry trade and unit labour costs

	Pre-crisis	Crisis
Albania	-29,69	-27,27
Bosnia and Herzegovina	-4,76	-52,18
Croatia	-30,59	-67,56
Macedonia	-36,61	-9,84
Montenegro	-26,99	20,45
Serbia	45,05	-66,53

Source: authors' calculations based COMEXT, WIIW and Eurostat data.

Negative correlation implies that if the relative unit labour cost in a Western Balkan country is increasing more than in a trading partner, intra-industry trade with the European Union trading partner is smaller. For most cases the correlation is small, implying that there is no direct link between trading patterns and unit labour cost adjustments. The results in the table show that only in two countries in the crisis period could the correlation be considered relatively strong – Croatia and Serbia. This implies that for these two countries, the higher their relative unit labour cost towards their trading partners, the lower the share of intra-industry trade they have with their trading

partners. This would suggest that for these countries increased competitiveness pressures can exert negative effects on their labour markets and vice versa.

If we compare the pre-crisis and crisis periods, we can notice important changes. For example, in the case of Croatia and Bosnia and Herzegovina, previously described mechanisms are more pronounced in the crisis period. The reverse is the case for Macedonia.

This macroeconomic overview indicates that trade patterns between Western Balkan economies and EMU trading partners during the accession period did not exhibit any significant changes in trend. The nature of trade resembled a North-South trading relationship, indicating the relative disadvantage of Western Balkan economies. It does seem that during the recession period most Western Balkan economies adjusted their unit labour costs, probably in order to boost competitiveness. Yet this again indicates that they are trading on the lower end of the market, trying to compete with low-cost labour products. To what end is this plausible long-run exporting strategy, remains to be seen.

4.2. Results of the microeconomic analysis: exporters and the creation of additional jobs in Western Balkans

All Western Balkan countries are characterized by high unemployment rates and sluggish labour markets (Mojsoska-Blazevski 2012). The question addressed in this segment of the paper is whether exporters are able to create additional job growth in comparison to non-exporters. In order to address this issue, we use a BEEPS Survey that enables comparative firm-level data analysis for the countries in the sample. Descriptive statistics for the sample used is presented in Table 2 (the names of the variables as well as their description are presented in Appendix Table A2).

Descriptive data shows that exporting firms have on average increased the number of employees in the previous three years to a greater extent than non-exporting firms[5]. However, there are differences in the sample structure that do not allow for a straightforward comparison of these two subsamples. For example, the share of large and medium-sized firms is higher in the case of exporters than in non-exporting companies. This indicates that there might be some preconditions for firms to reach a threshold size before they start exporting. However, this could also be period-specific. Since the survey was conducted during the crisis period (or the sample reflects the effects of the last crisis), it could be argued that the crisis had more adverse effects on the probability for micro and small exporting firms to survive. In this context, a study by Van Beverent et al. (2016) and OECD (2009) show that smaller firms are more often the victims of prolonged economic crisis than larger firms.

Table 2: Exporters and non-exporters characteristics in Western Balkan countries

Variable	Non-exporters	Exporters
Empldelta	1.05	1.76
Micro	0.04	0.01
Small	0.65	0.43
Medium	0.24	0.39
Large	0.07	0.17
Private	0.90	0.83
State	0.00	0.02
Manufacture	0.26	0.57
Ino	0.51	0.72
Growth	21.27	1155.75
market_inter	0.03	0.32
foreign_mat	41.23	51.46
capacity_ut	62.57	67.94
manager_exper	16.73	18.85
University_share	2.24	1.30
Product_work	0.67	0.73
skill_product	0.80	0.83
training_prod	59.02	59.72
training_nonpr	38.70	43.18
Certifikat	0.25	0.43
Technology	0.15	0.25
Specialization	72.82	73
Positive_exp	0.45	0.56

Source: authors' calculations based on BEEPS.

Another striking difference is in the variable that depicts the growth in sales in the three-year period. It seems that at least some of the exporting firms recorded unusually high growth in sales, resulting in a high average value for the subsample. This might also be a consequence of the data collection method itself. Yet instead of trying to identify outliers, a matching methodology has been applied in the further analysis to gain insights into the different outcomes between exporting and non-exporting firms.

In order to compare similar firms, we perform propensity score matching and analyse average employment growth for comparable exporting and non-exporting firms. This will enable us to see whether the observed differences in employment growth between exporters and statistically comparable non-exporters are really present. All of the covariates presented in

Table 2 were considered, but only those satisfying balancing property remained in the underlying probit model (see Appendix Table A1). It is interesting to notice our pooled cross section estimates suggest that a firm is more likely to be an exporter if it is a large enterprise oriented towards an international market for their main product and with a manager having experience in the same economic activity the firm is registered in. Other predictors were not found to be significant. The only exception is a country dummy variable for Macedonia, where it seems that enterprises from that country are on average less likely to be exporters.

The average treatment effect of the treated (in our case the difference in the outcomes of employment growth between exporters and non-exporters) has been estimated using two approaches – nearest neighbour matching and kernel matching (using an Epanechnikov kernel function[6]) method. The results are presented in the following table.

Table 3: Average treatment effect of the treated (ATT) estimates: differences in employment growth between exporters and non-exporters

Estimation method	Nearest neighbour	Kernel matching
Estimated ATT	0.19	0.18
Estimated standard error	0.17	0.17

Source: authors' estimates based on BEEPS.

The results in the previous table reveal that, regardless of the method applied, the exporters did obtain higher employment growth. However, the difference was not significant, once we compare similar types of firms according to various characteristics.

Hence the initial impression that exporters do create additional employment actually was not confirmed by the empirical analysis. We might speculate that this is due to the crisis. However, in order to corroborate this assumption, additional empirical analysis is required that would inspect results both in the boom and in bust phases of the cycle. This is left for future research.

5. CONCLUSIONS

The aim of this paper was to contribute to the vigorous discussion on the intertwining areas of EU integration and competitiveness of the Western Balkan economies. This is a complex issue with manifold manifestations. The focus in the present paper is on trade patterns and labour market outcomes.

Our first set of findings suggest that intra-industry trade patterns between Western Balkan and EU economies reveal the unequal position of these two groups of countries. This pattern has not changed significantly if we compare the pre-crisis and crisis periods. In other words, the relative bilateral position of countries reveals not only the previous bilateral relationship but also the differences in the adverse effects of the latest economic crisis.

Due to this North-South trade relationship it is interesting to investigate the standard price (cost) competitiveness argument. Our bilateral comparisons of unit labour costs growth indicated that: countries differ in their relative competitiveness (some have declining, while others increasing competitiveness); countries that had adverse competitiveness trends before the crisis significantly changed their relative unit labour costs during the crisis; and each Western Balkan country developed a unique relationship with each EU country.

Theoretical assumptions suggest that increases in cost competitiveness should enable export increases. However, this requires ceteris paribus. Due to the turbulent period this paper is trying to encompass and bearing in mind the data constraints, we did not inspect this relationship in detail, but left this important discussion for future research[7].

Instead, in the second empirical exercise we explored whether those firms that were able to export (not only towards the European Union) also created additional employment. Our results suggest that, although there are some positive differences, they are not statistically significant when we consider similar firms according to multiple criteria. This could be attributed to the crisis period and to the fact that all firms (both exporting and non-exporting) were faced with an adverse business climate. Since all of the analyzed countries are small open economies, the firms operating solely on domestic markets are also under the influence of competitive pressure from other countries.

The general conclusion is that there seems to be an adverse relationship between trade and labour market outcomes in the Western Balkan economies. Firms aim to alleviate the competitiveness pressures by reducing labour cost. At the same time, the economies trade at the lower end of the market, where low labour costs are a precondition for competitiveness. From a policy perspective, this does not portray a sustainable development path leading to the successful integration of Western Balkan economies. Naturally, we only briefly focused on specific segments of the process, and a sudden positive asymmetric shock could create an additional spur for this group of post-transition economies.

Appendix

Table A1: Predictors for a firm to be an exporter

	Estimated Coefficients (standard errors)
Constant	-1.53 (0.94)
Micro	0.93 (0.96)
Small	-0.17 (0.22)
Large	0.68** (0.27)
private	-0.04 (0.22)
Ino	0.29 (0.23)
market_inter	1.27*** (0.25)
foreign_mat	0.00 (0.00)
capacity_ut	0.00 (0.00)
manager_exper	0.02 ** (0.01)
University_share	-0.00 (0.07)
Product_work	0.68 (0.49)
skill_product	-0.23 (0.33)
training_prod	0.00 (0.00)
training_nonpr	0.00 (0.00)
certifikat	0.32 (0.20)
technology	-0.10 (0.20)
specialization	-0.01 (0.00)
positive_exp	0.16 (0.18)
manufacture	0.07 (0.66)
albania	-0.67 (0.46)
bih	0.02 (0.28)
kosovo	-0.36 (0.32)
monte	-0.96 (0.59)
fyrm	-0.55* (0.29)
serbia	-0.04 (0.31)
Diagnostics	
Number of obs	280
LR chi2 (25)	96.72
Pseudo R2	0.25

Source: authors' estimates based on BEEPS data.

Table A2: Definition of variables and data sources

Variable	Description	Source
exporter	= 1, if firm has positive share of exports in total sales	BEEPS
empldelta	= number of workers last fiscal year / number of workers 3 years ago	
micro	= 1, if this is a micro firm (less than 5 employees)	
small	= 1, if this is a small firm (more than 5, less than 19 employees)	
medium	= 1, if this is a medium-sized firm (more than 19, less than 100 employees)	
large	= 1, if this is a large firm (more than 100 employees)	
private	= 1, if firm was established from time of start-up as private	
state	= 1, if firm was established as state-owned	
manufacture	= 1, if a firm's main activity is within manufacturing sector	
Inovate	= 1, if firm had innovation output or R&D	
growth	= sales last fiscal year / sales 3 years ago	
market_inter	= 1, if the main market for firm's products is international	
foreign_mat	= share of foreign material in production input	
capacity_ut	= capacity utilization	
manager_exper	= number of years manager is working in this specific sector	
University_share	= share of employees with university degree in total	
Product_work	= share of production workers in total	
skill_product	= share of skilled workers in production workers	
training_prod	= share of permanent production workers who obtained training	
training_nonpr	= share of permanent non-production workers who obtained training	
certifikat	= 1, if firm has international certificate	
technology	= 1, if firm utilizes licenced technology	
specialization	= share of main product in total sales	
Positive_exp	= 1, if a firm expects its sales to increase next fiscal year	
Exports, imports	= value and quantity of bilateral exports, imports	COMEXT
wages	= wages in EUR	WIIW and Eurostat
productivity	= gross value added / total number of employees	WIIW and Eurostat

Endnotes

1 Macedonia in the rest of the paper.

2 Instead of Kosovo under UNSCR 1244/99 we apply simple Kosovo throughout the paper, to enhance the readability.

3 It should be noted that since the mid 2013 Croatia became a member of the EU.

4 Detailed information on BEEPS V is available on http://ebrd-beeps.com/

5 The data on the average increase in the number of employees refers to three years prior to 2012/2013, which are the years when the BEEPS survey has been conducted.

6 This has been obtained by following psmatch2 procedure in STATA 13.

7 Another interesting point will deserve attention in the future. Croatia has joined the EU in July 2013 and consequences of this event have not been investigated in this research. This might be an interesting point for future research in order to see if accession to the EU has changed the observed patterns and conclusions.

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