



PAPER 1

AN ANALYSIS OF TOTAL (ENVIRONMENTAL) TRADE GLOBALIZATION (OR DE-COUPLING) PATTERNS IN THE CASE OF WESTERN BALKAN COUNTRIES

by

Gerti Shijaku and Elona Mulgeci

PAPER 2

TRADE (ENVIRONMENTAL) GLOBALIZATION, ECONOMIC GROWTH AND LABOUR PRODUCTIVITY IN WESTERN BALKAN COUNTRIES

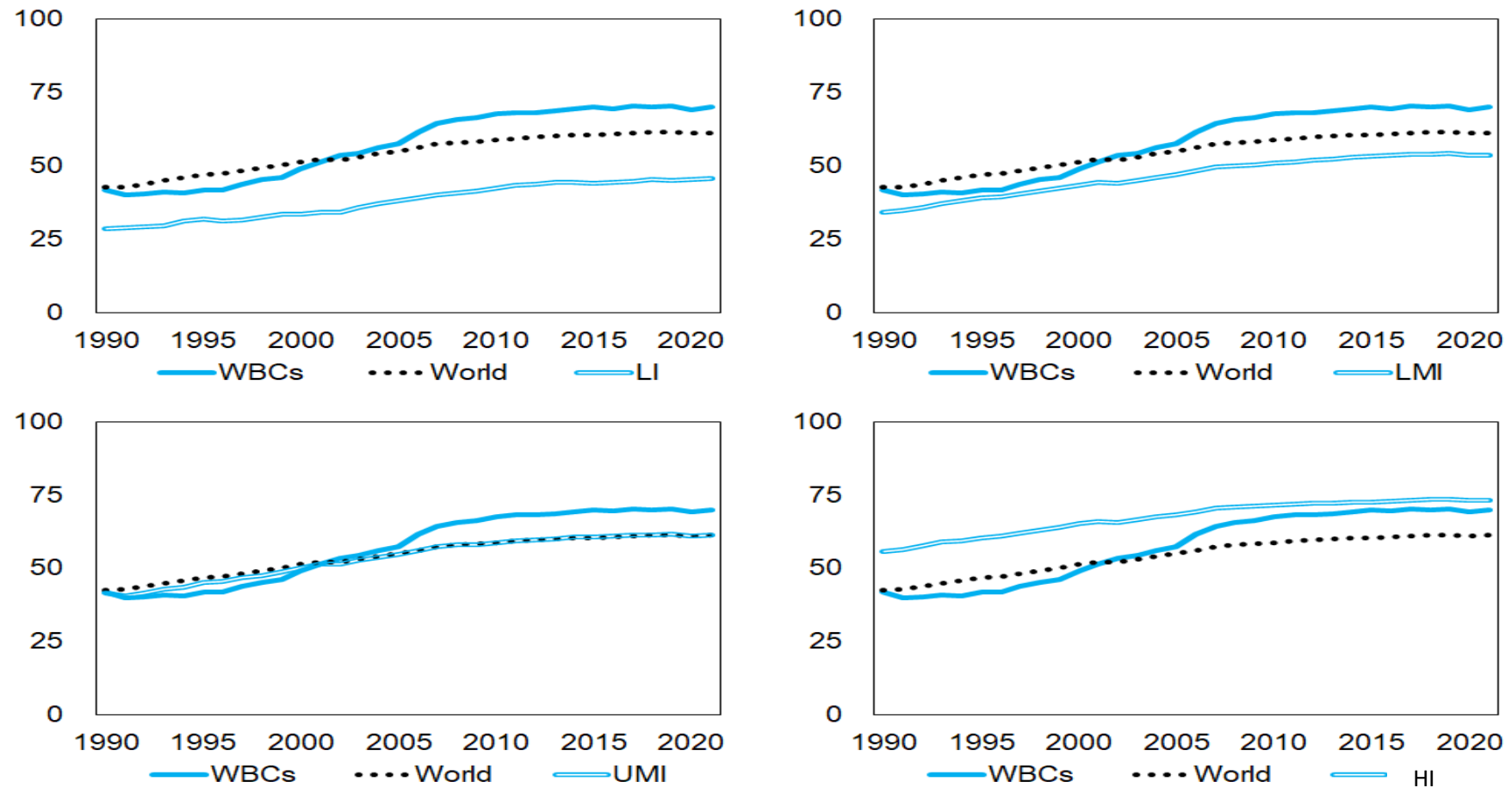
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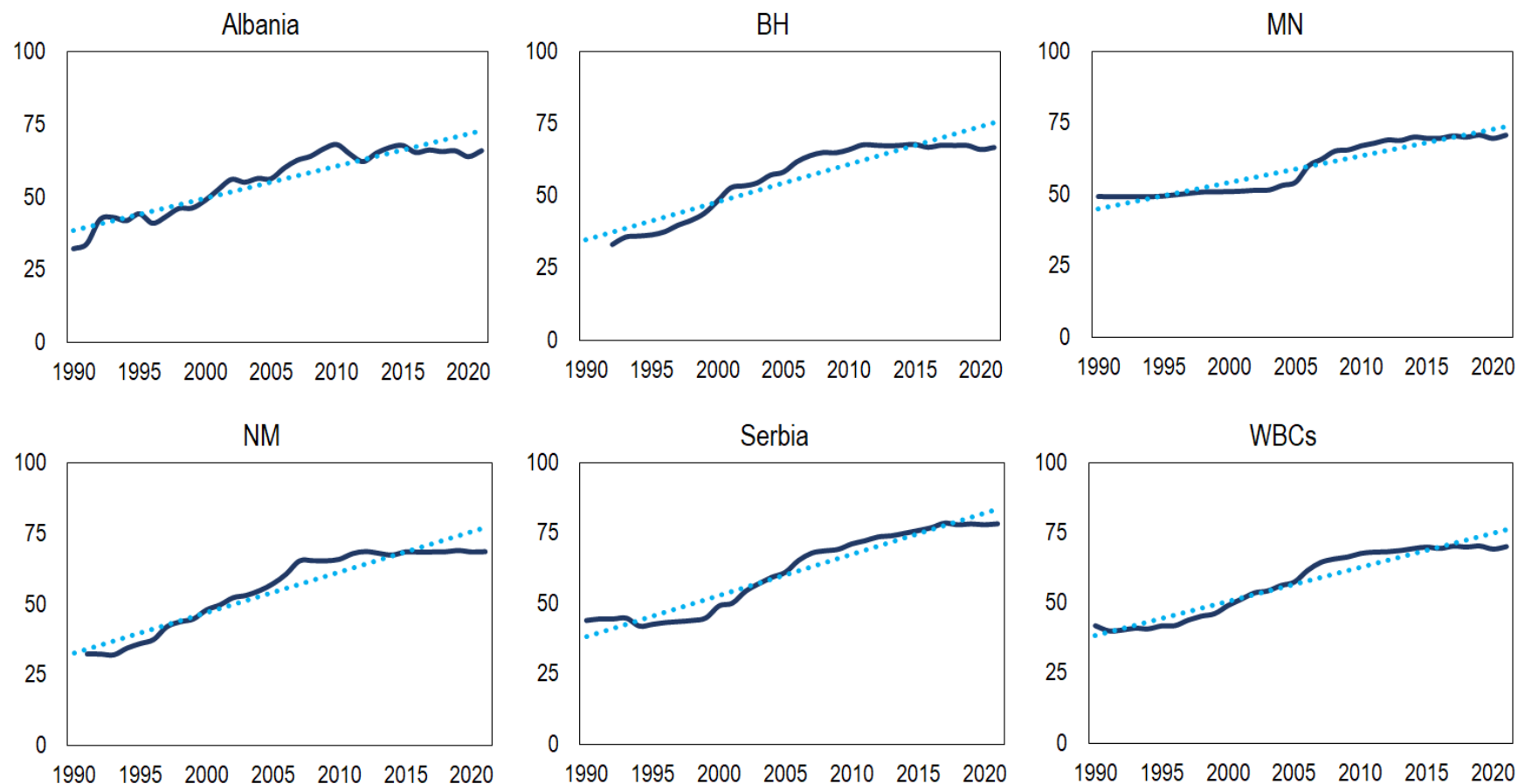
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Figure 1. The KOF Globalisation Index performance during 1990 - 2022.



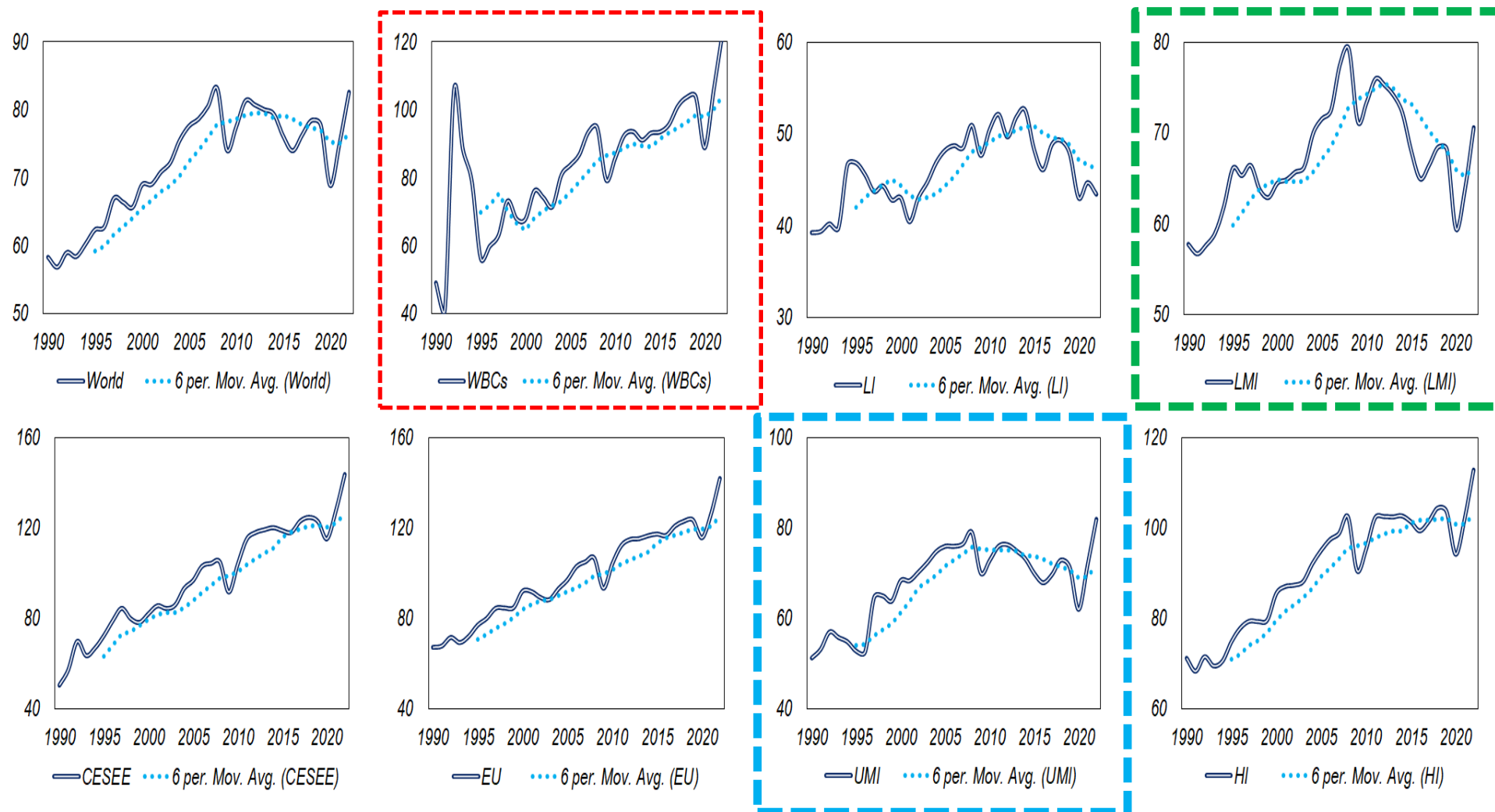
Source: KOF Swiss Economic Institute; Authors' Calculations.

Figure 2. The KOF Globalisation Index performance of WBCs.



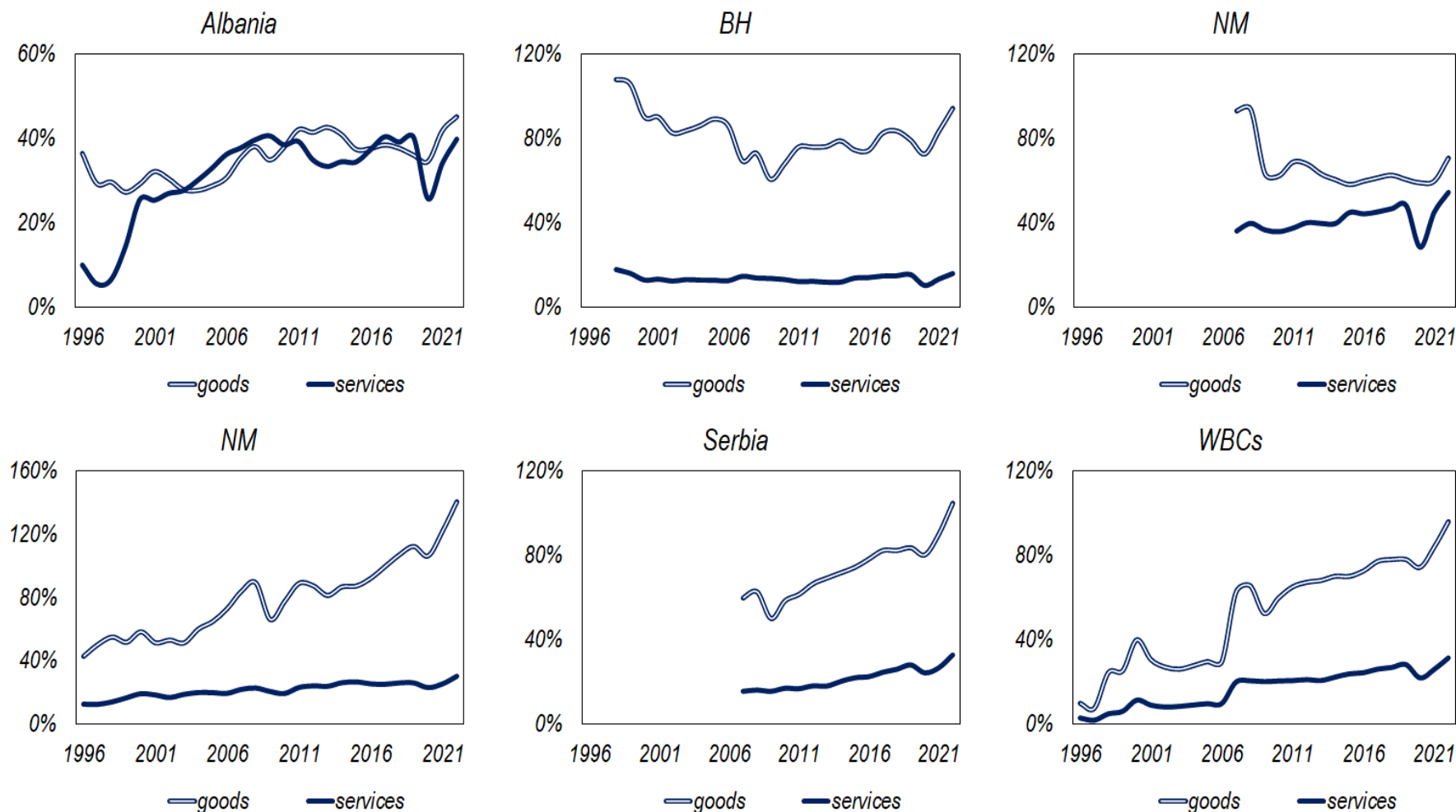
Source: KOF Swiss Economic Institute; Authors' Calculations.

Figure 3. Trade Openness as a share of Import and Export to GDP ratio (in percentage point).



Source: World Bank; Authors' Calculations.

Figure 4. Total Trade structure (Imports and Exports) of Goods and Services to GDP ratio.



Source: World Bank; Authors' Calculations.

Theoretical Approach, including [OECD \(2005\)](#), accepts it is a complex, multi-scalar and multidimensional integration process, in which the increase in the mobility of production factors reduces the importance of distance (and space), that is difficult to grasp and define in its many aspects with a single measurement instrument. **BUT**, as such some see it as a process that:

- Describes also a process of creating networks of connections among actors at multicontinental distances, mediated through a variety of flows including people, information and ideas, capital and goods [[Clark \(2000\)](#)].
- Erodes national boundaries, integrates national economies, cultures technologies and governance and produces complex relations of mutual interdependence [[Norris \(2000\)](#)],
- Stretches the economic, political, and social relationships changes that have come in space and time, which is that it promotes and increases interactions between different regions and populations around the globe [[Keohane and Nye \(2000\)](#)].

Some understanding it also through the concept of:

- [Near-shoring](#) the practice of transferring business operation to a nearby country rather than to a more distant one.
- [De-coupling](#) defining it as the process of weakening interdependence between two nations or blocs of nations.

Empirical Approach: some use single metrics, e.g. trade flows (or FDI or portfolio investments) as % of GDP, others have use composite metrics, including economic, political and cultural changes, e.g. [A. T. Kearney/Foreign Policy \(KFP\) Globalization Index](#); [CSGR Globalisation Index](#); [Global Index](#); [Maastricht Globalisation Index \(MGI\)](#); [KOF Index of Globalization \(KOFGI\)](#); [New Globalisation Index \(NGI\)](#); and [Person-Based Globalisation Index \(PBGI\)](#).

Theoretical Approach on trade – growth nexus is two-sides:

- **One side assumes** that it stimulates economic growth, supported by a **comparative advantage trade theory** and **an endogenous growth theory**, attributed to specialisation in sectors with economies of scale and to the widespread dissemination of human capital, advanced knowledge and new innovation technologies transfers in particular when EMEs engage in trade with technologically advanced economies, e.g. WBCs with EU countries.
- **Other side** argues that an increase in openness to trade could be growth retarding by increasing the prices of goods and services and depreciating the value of the domestic currency, which is particularly more pronounced in economies that specializes in the production and exportation of primary products that are competitively of low quality and subject to shocks of terms of trade.

BUT, as **Shayanewako (2018)** states, in either case the trade-growth nexus could be also weak in developing countries if the comparative advantage theory is poorly understood and insufficiently implemented.

Empirical Approach: some use single metrics, e.g. trade flows (as % of GDP) or composite metrics, under different sample approach (**single country or panel estimation**) and use of estimation techniques (OLS, VAR, VECM, ARDL, or GMM approach), either in the case of EME or Developed countries, BUT with the focus Trade – Growth Nexus, all of which provide supportive evidence or either a positive or negative relationship between them.

Use an environmental (trade) globalisation (ETG) metrics that considers trade volume, economic size and distances of international trade between WBCs and other trade partners, expressed as follows:

$$ETG_i = \int (\text{trade volume}, \text{economic size}, \text{distances}) \quad (1)$$

Where, first we distinguish between exports and imports, as follows:

$$ETG_{i,exports} = \sum_{i=1}^N \left(\frac{X_{i,exports}}{GDP_i} \right) = 1, 2, \dots, n \quad (2)$$

And,

$$ETG_{i,imports} = \sum_{i=1}^N \left(\frac{X_{i,imports}}{GDP_i} \right) = 1, 2, \dots, n \quad (3)$$

And, the total level of trade, which would be consider as a trade openness and used analyse the degree of global involvement of each country (or of the region), is calculated as follows:

$$ETG_{i,total} = ETG_{i,exports} + ETG_{i,imports} \quad (4)$$

Upon that, as [Palan, et al., \(2020\)](#) declare, understanding bilateral trade globalisation flow linkages would be limited if an important aspect, such as distance, would not be considered, upon which [Chortareas and Pelagidis \(2004\)](#) see the risk of misleading between (trade) globalisation and (trade) regionalization.

For this reason, we multiplied our trade indicator with a relative distance indicator, expressed as follows

$$ETG_{i,exports} = \sum_{i=1}^N \left(\frac{X_{i,exports}}{GDP_i} \right) * Dist_{i,h,t}, i = 1, 2, \dots, n \quad (5)$$

And,

$$ETG_{i,imports} = \sum_{i=1}^N \left(\frac{X_{i,imports}}{GDP_i} \right) * Dist_{i,h,t}, i = 1, 2, \dots, n \quad (6)$$

Where, $Dist_{i,h,t}$ denotes the relative geographic distances that bilateral trade flows between two countries, country i (origin) and h (destination) at each point of time, t , capturing the proportion of the total distance among all the WBCs.

The study follow [Monyela and Saba \(2024\)](#), using the theoretical aspect of CA and endogenous growth theory, for which it adapts a Cobb-Douglas production model with constant returns to scale, expressed as follows:

$$Y_t = A_t K_t^{\beta_1} L_t^{\beta_2} Trade_t^{\beta_3} \varepsilon_t \quad (7)$$

Where, output (Y), at time t , is a function of trade ($Trade$), and capital (K); labour (L) and technology (A). β_i represents elasticities related to capital, labour and technology (innovations) changes or shocks, respectively. (ε) is an error term. Several other control variables are included to their impact on output, where Equation [1] becomes as:

$$GDP_{i,t} = \beta_0 + \sum_{i \in I} \beta_1 Macroeconomics'_{i,t-h} + \beta_2 Banking'_{i,t} + \beta_3 Trade'_{i,t} + \varepsilon_{i,t} \quad (8)$$

Where $i = 1, \dots, N$ denotes the country included in the panel estimation [[Albania](#), [BH](#), [MN](#), [NM](#), and [Serbia](#)], $t = 1, \dots, T$ refers to the time period, $GDP_{i,t}$ is our dependent or response variable represented by the real gross domestic product, and a set of control variables are grouped into three different categories:

- (1) $Macroeconomics'_{i,t}$ includes some macroeconomic variables that account for state of economy;
- (2) $Banking'_{i,t}$ is a set of market-specific variables that account for the financial condition within each given country; and
- (3) $Trade'_{i,t}$ is the set of trade-related variables that account for trade volume, as well as the ability and capacity of each country to trade more.

Following Goldin (2016), who sees trade as a direct contributor of the economic value of labour productivity (*PROD*), known also as workforce productivity, and capital formation (*GFC*) to which we estimate also two other equations:

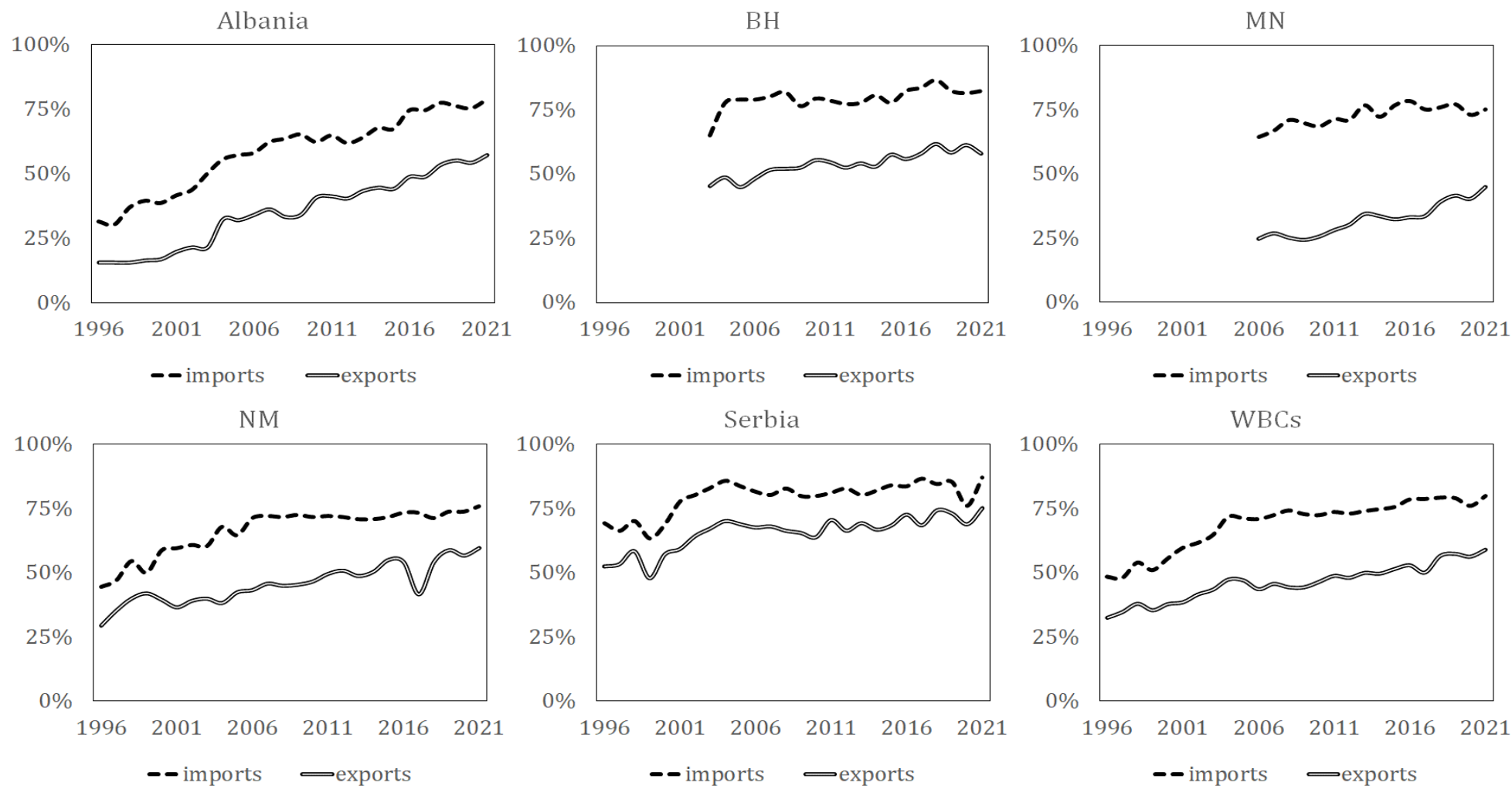
$$PROD_{i,t} = \beta_0 + \sum_{i \in I} \beta_1 Macroeconomics'_{i,t-h} + \beta_2 Banking'_{i,t} + \beta_3 Trade'_{i,t} + \varepsilon_{i,t} \quad (9)$$

And,

$$GFC_{i,t} = \beta_0 + \sum_{i \in I} \beta_1 Macroeconomics'_{i,t-h} + \beta_2 Banking'_{i,t} + \beta_3 Trade'_{i,t} + \varepsilon_{i,t} \quad (10)$$

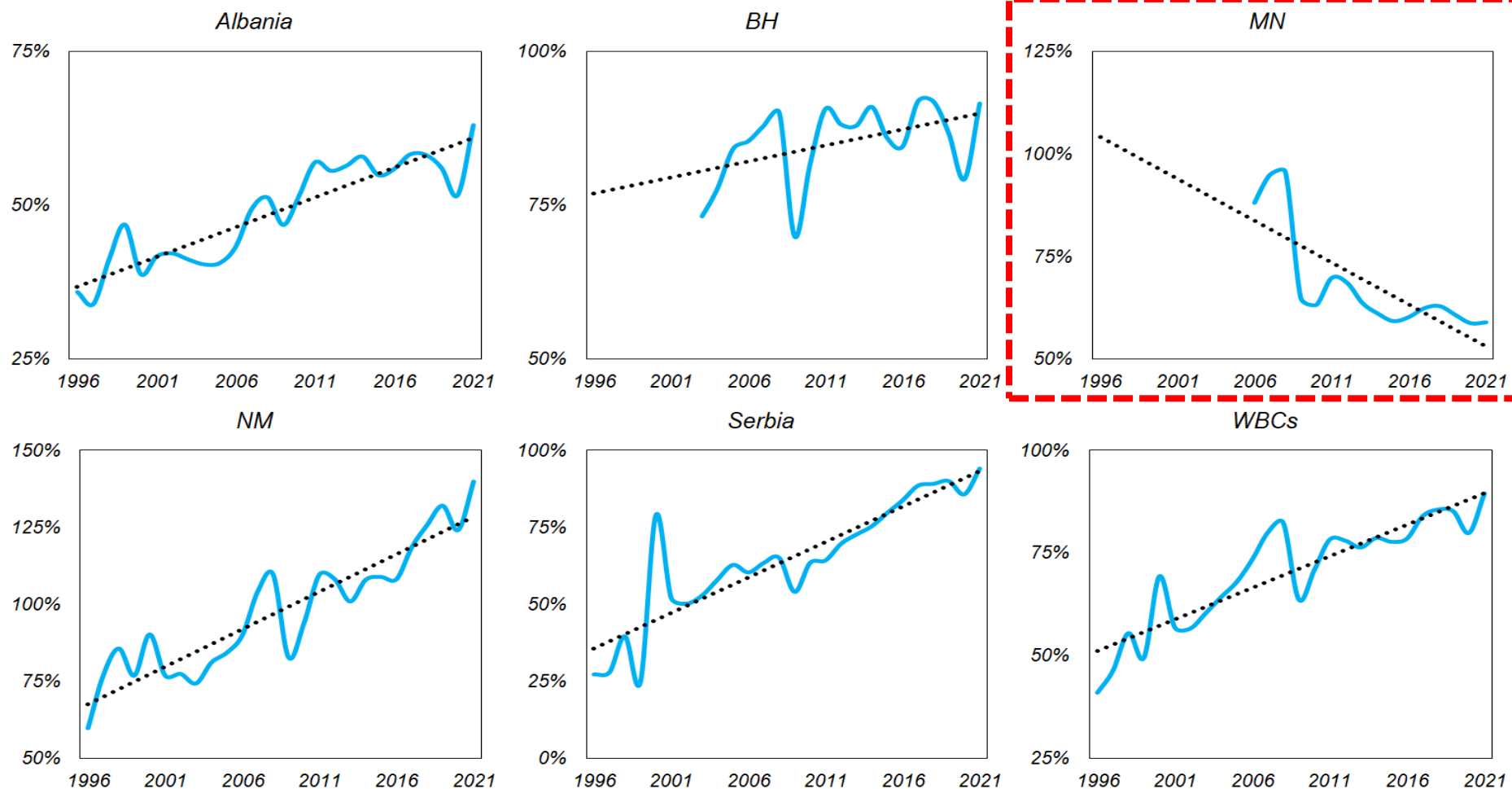
Macro and Financial Indicators	PRICE	Annual % change of CPI.	Source of the Data: World Bank; (IMF) Direction of Trade Statistics (DOTS); O World Integrated Trade Solution ECD; International Financial Cooperation; National Central Banks; author's calculations.
	MPR	Monetary Policy Rate (policy rate – inflation rate)	
	EX	Exchnage rate of domestic durrency	
	BL	Bank lending (% of GDP)	
	BSI	Bank stability condition (composite of 12 indicator - CAELS)	
Trade Related Indicators	TT	Total trade (as % of GDP)	
	MT	Merchandise trade (as % of GDP)	
	ENVT	Environmental trade (as % of GDP)	
	LCTT	Low-carbon technology trade (as % of GDP)	
	CAET	Comparative Advantage Exporting Environmental Products	
	CALCT	Comparative Advantage Exporting Low-Carbon Technology Products	
	EMP	Export Market Penetration	
	TTERMS	Terms of Trade	
	BALET	Trade balance (as % of GDP) on Environmental Products	
	BALLCT	Trade balance (as % of GDP) on Low-Carbon Technology Products	
	HHIT	Hirschman-Herfindahl index on trade concentration	

Graph 5. The number of trade patterns in % of total no. of country (total trade).



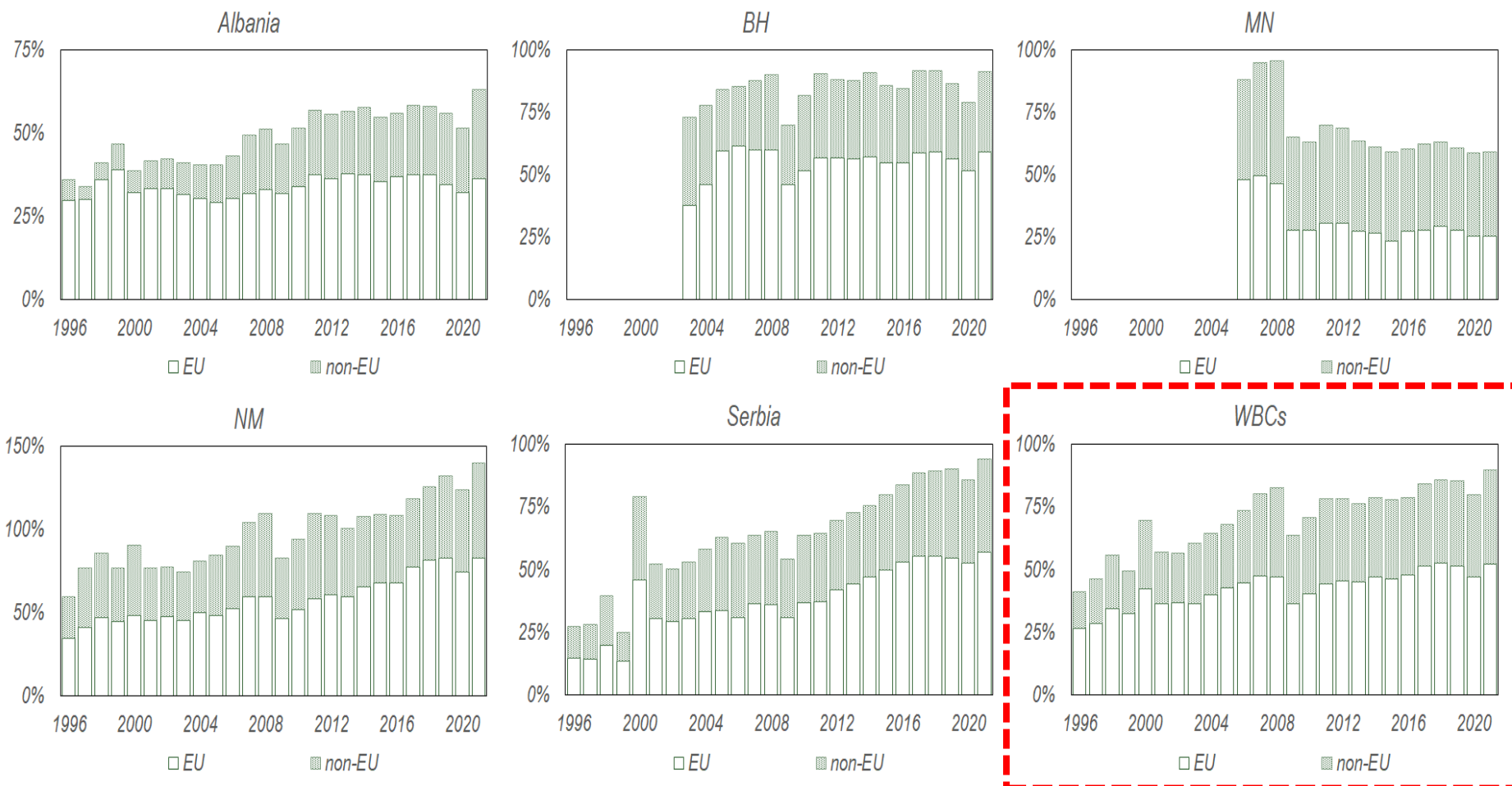
Source: Authors' Calculations.

Figure 6. Total Trade structure (to GDP ratio) and trend patterns over the period 1996 - 2022.



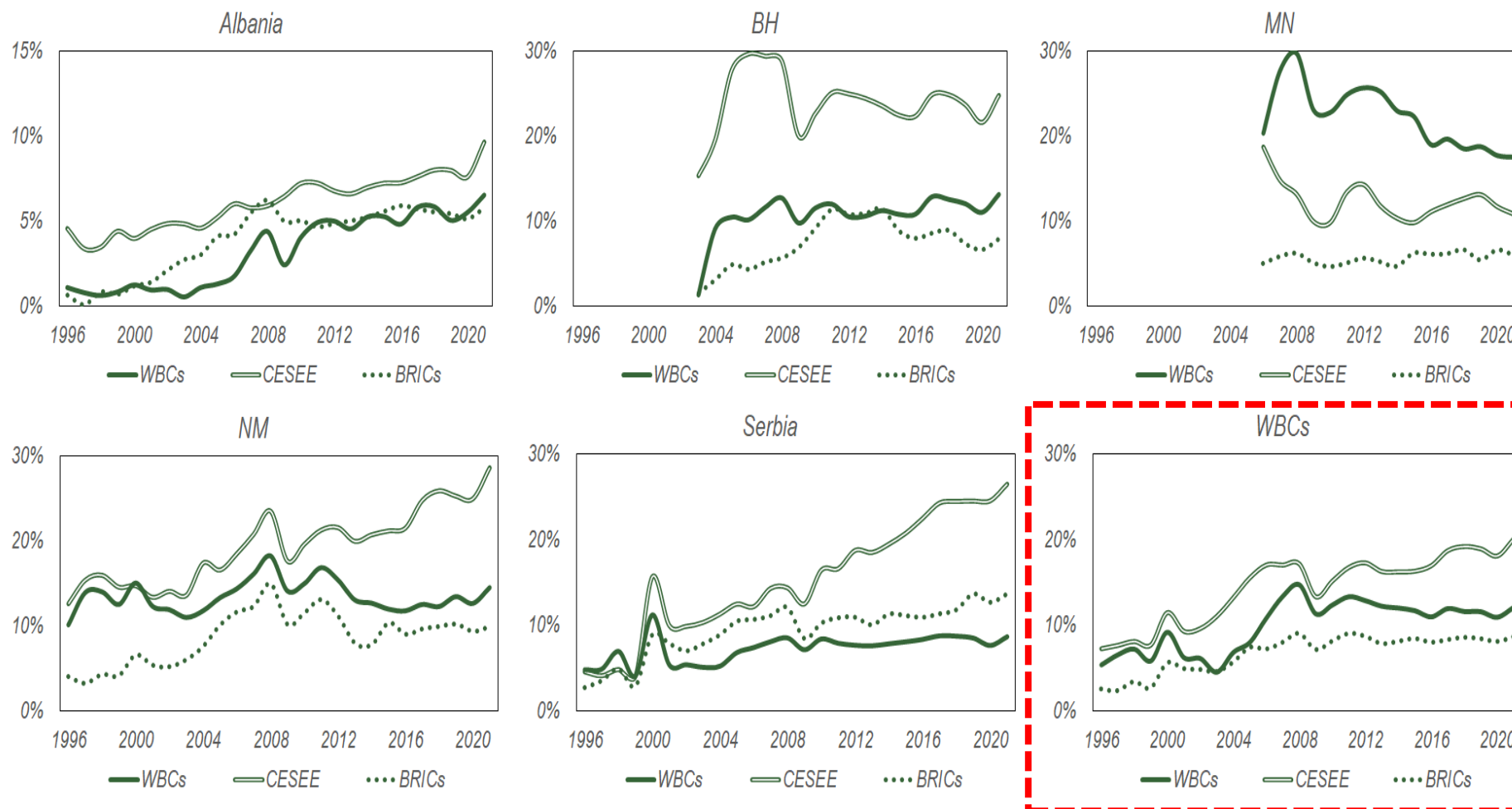
Source: World Bank; Authors' Calculations.

Figure 7. Total Trade structure (to GDP ratio): EU Versus Non-EU partners countries.



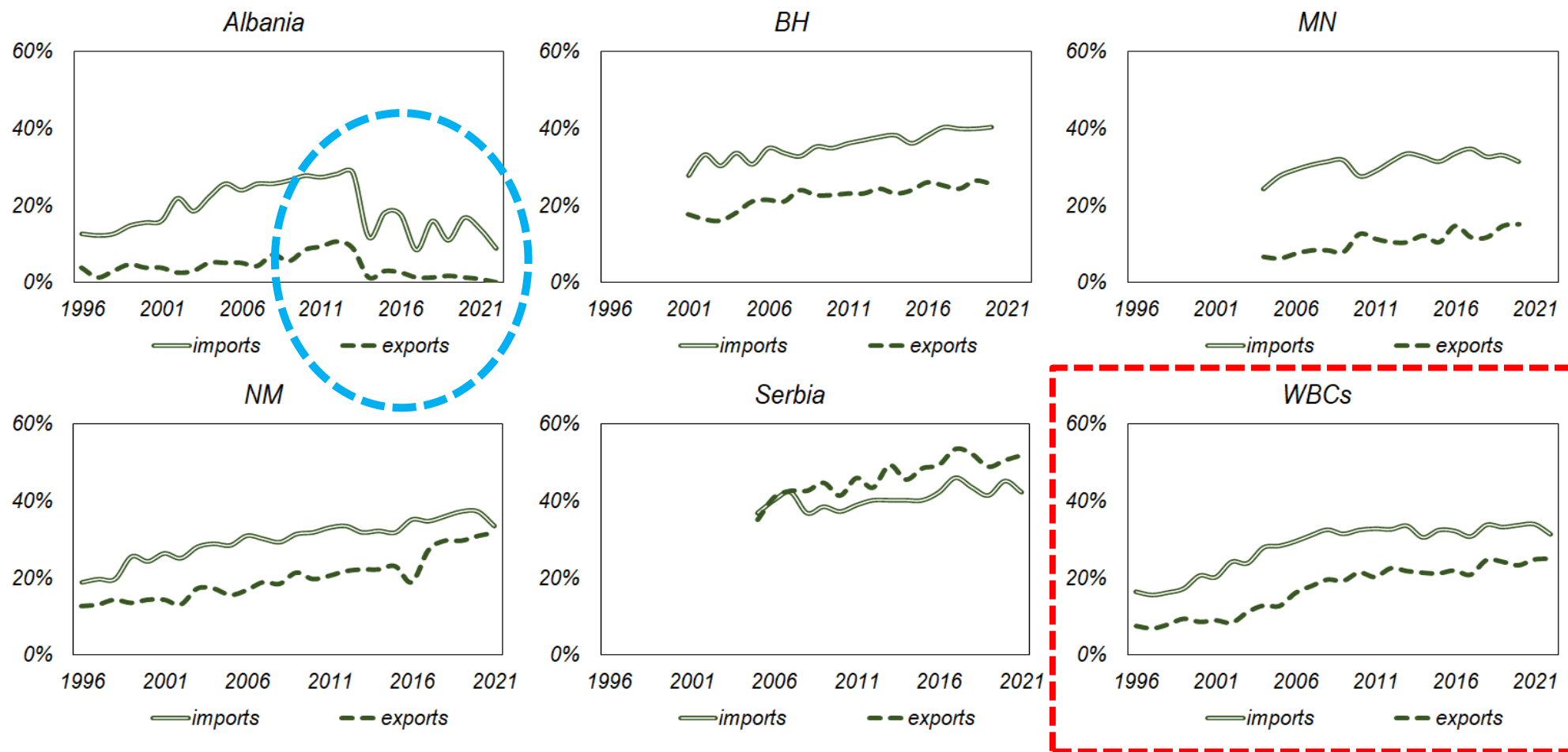
Source: World Bank; Authors' Calculations.

Figure 8. Total Trade structure (to GDP ratio) with other group of countries.



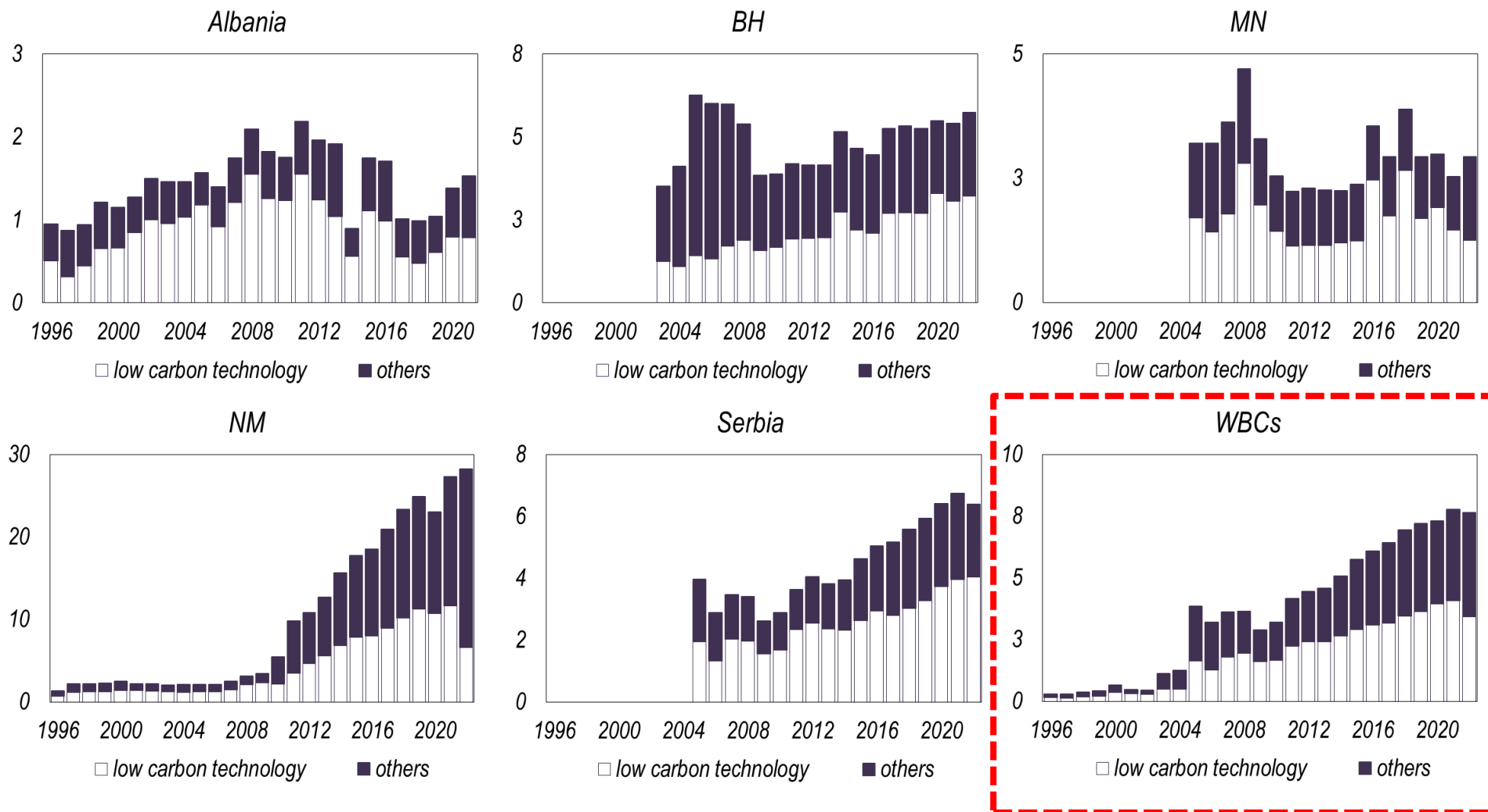
Source: World Bank; Authors' Calculations.

*Graph 9. The number of trade patterns in % of total no. of country.
(Low-carbon technology products).*



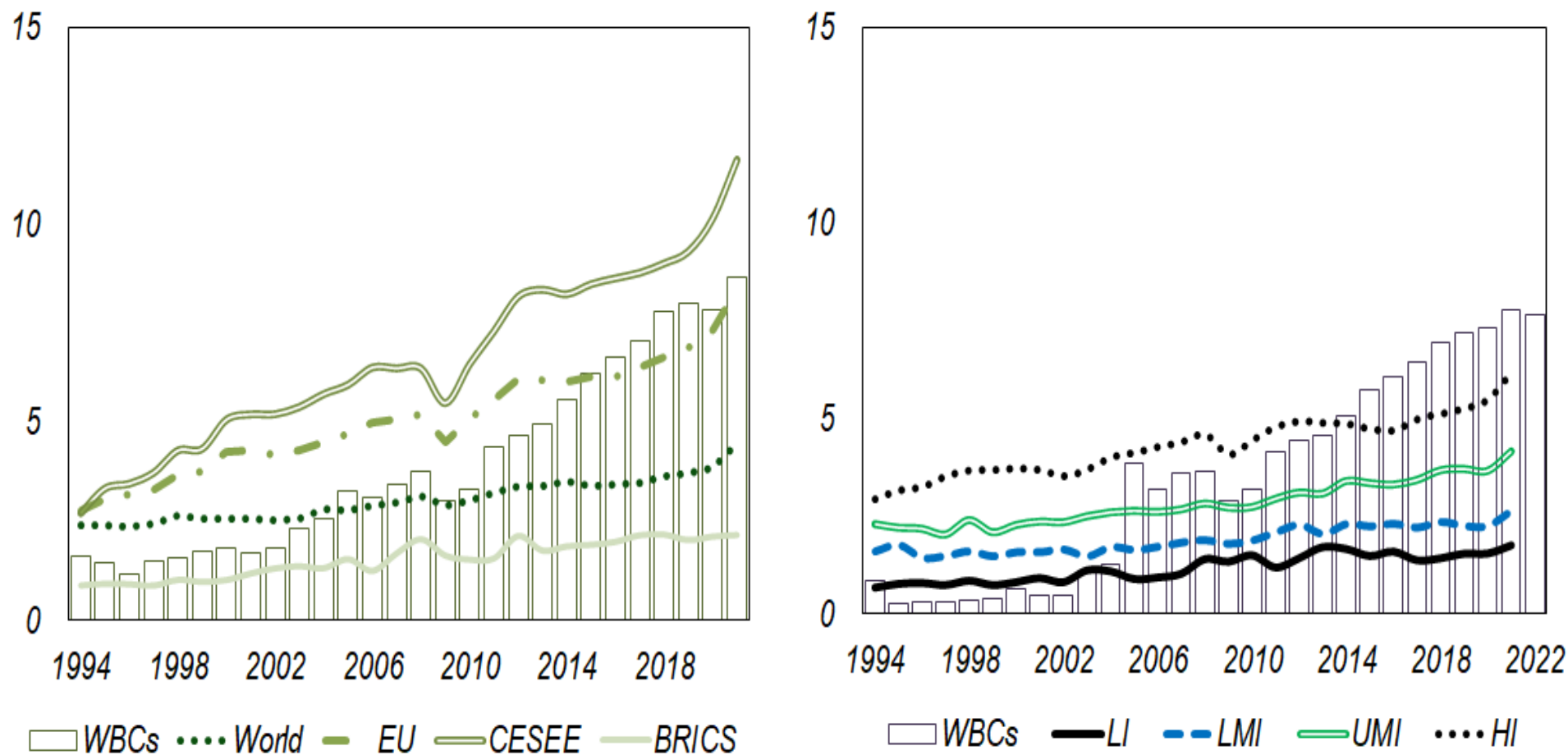
Source: Authors' Calculations.

Graph 10. The volume of environmental trade flows in % of GDP.



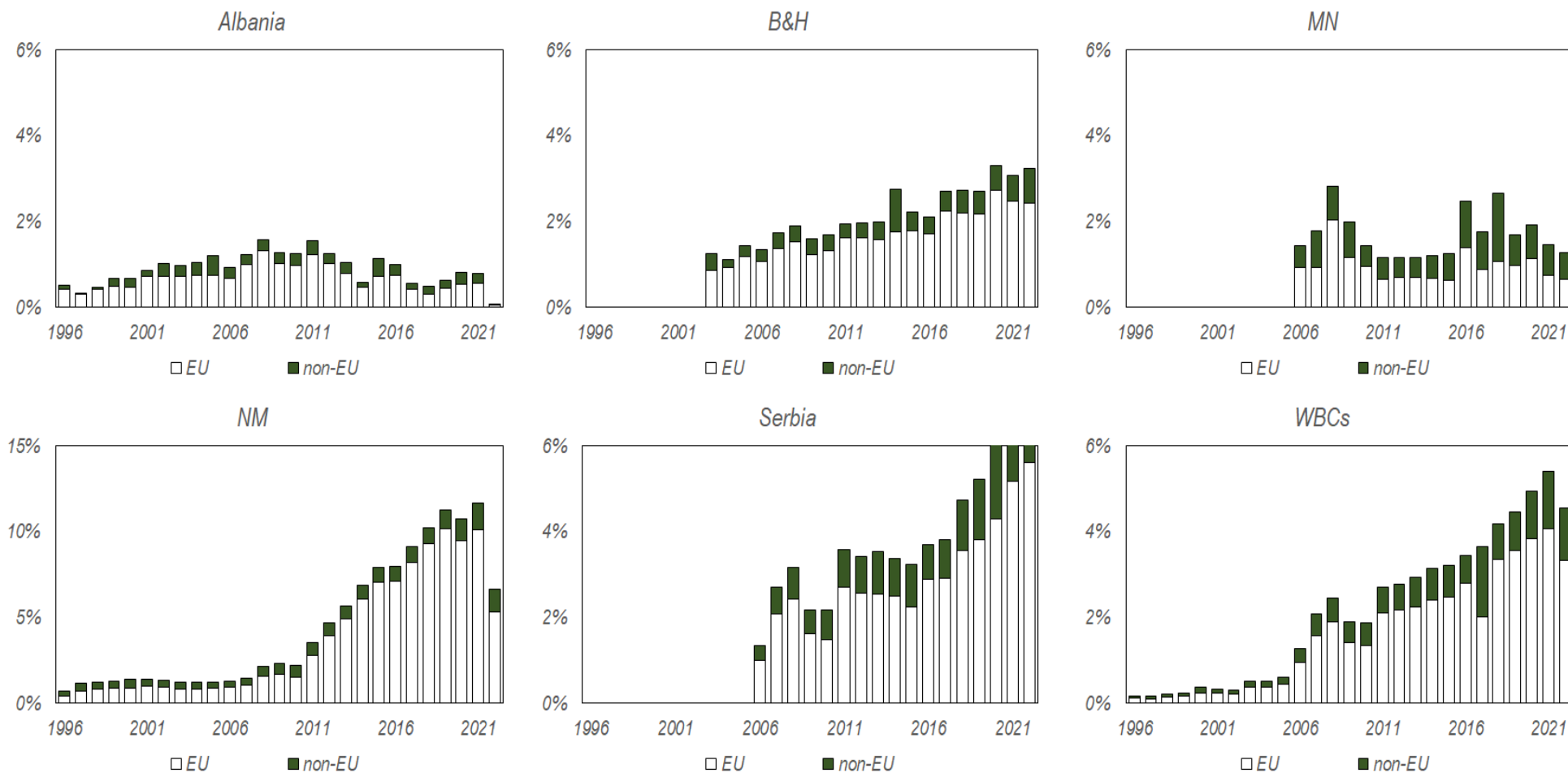
Source: Authors' Calculations.

Figure 11. WBCs trade performance (to GDP ratio) compare to other country / region.



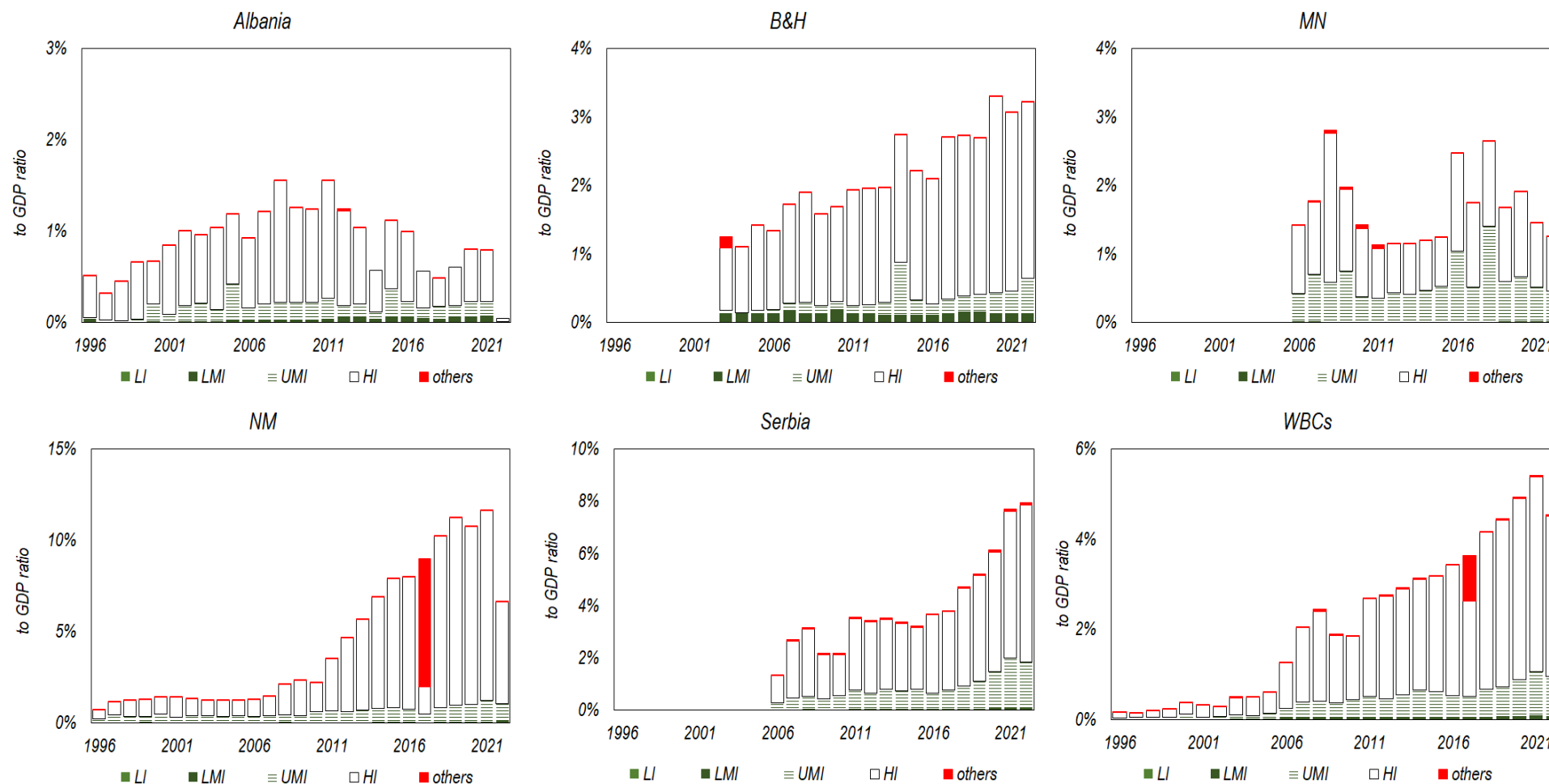
Source: World Bank; Authors' Calculations.

Figure 12. WBCs LCT trade partners.



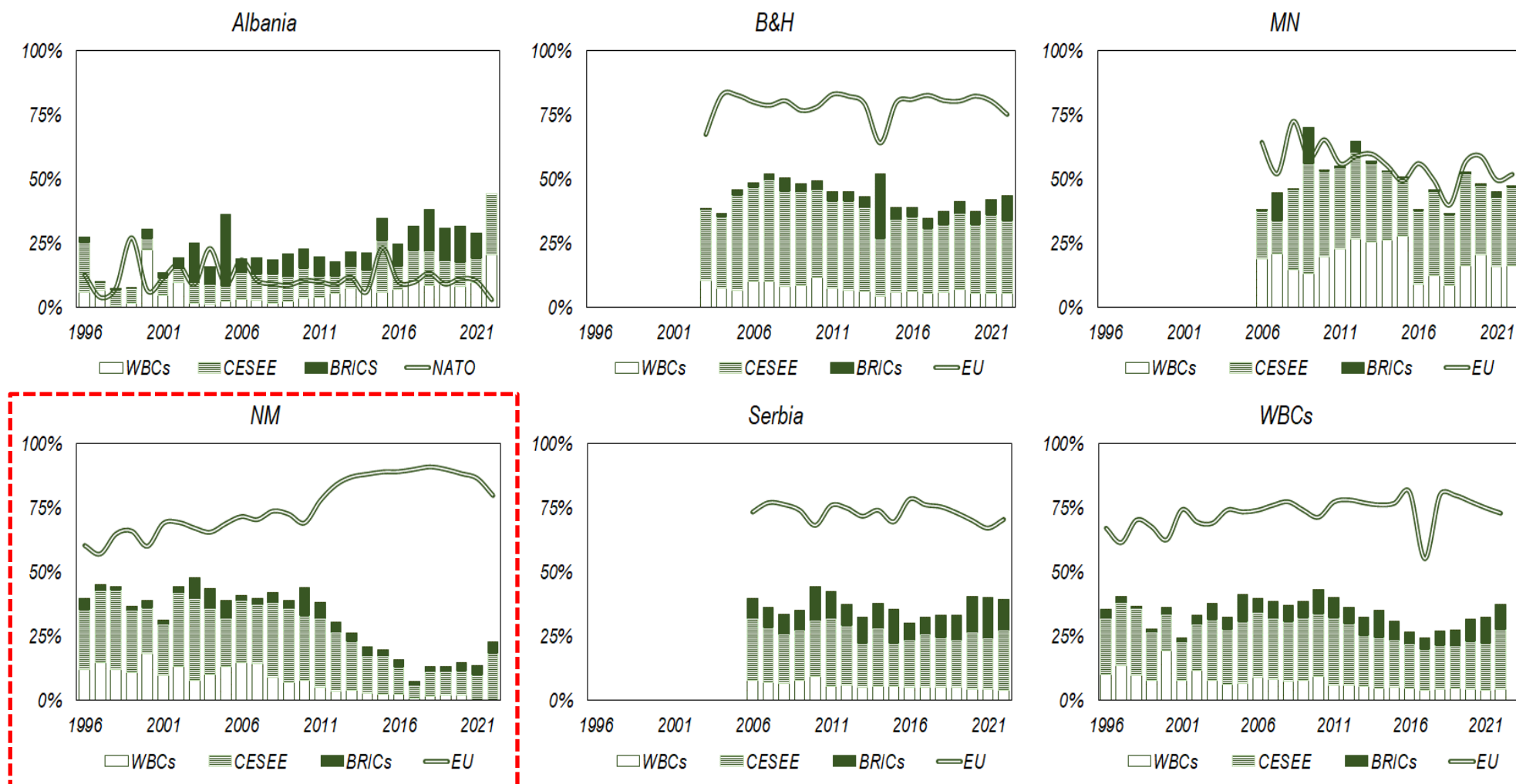
Source: World Bank; Authors' Calculations.

Figure 13. WBCs LCT trade partners on income basis.



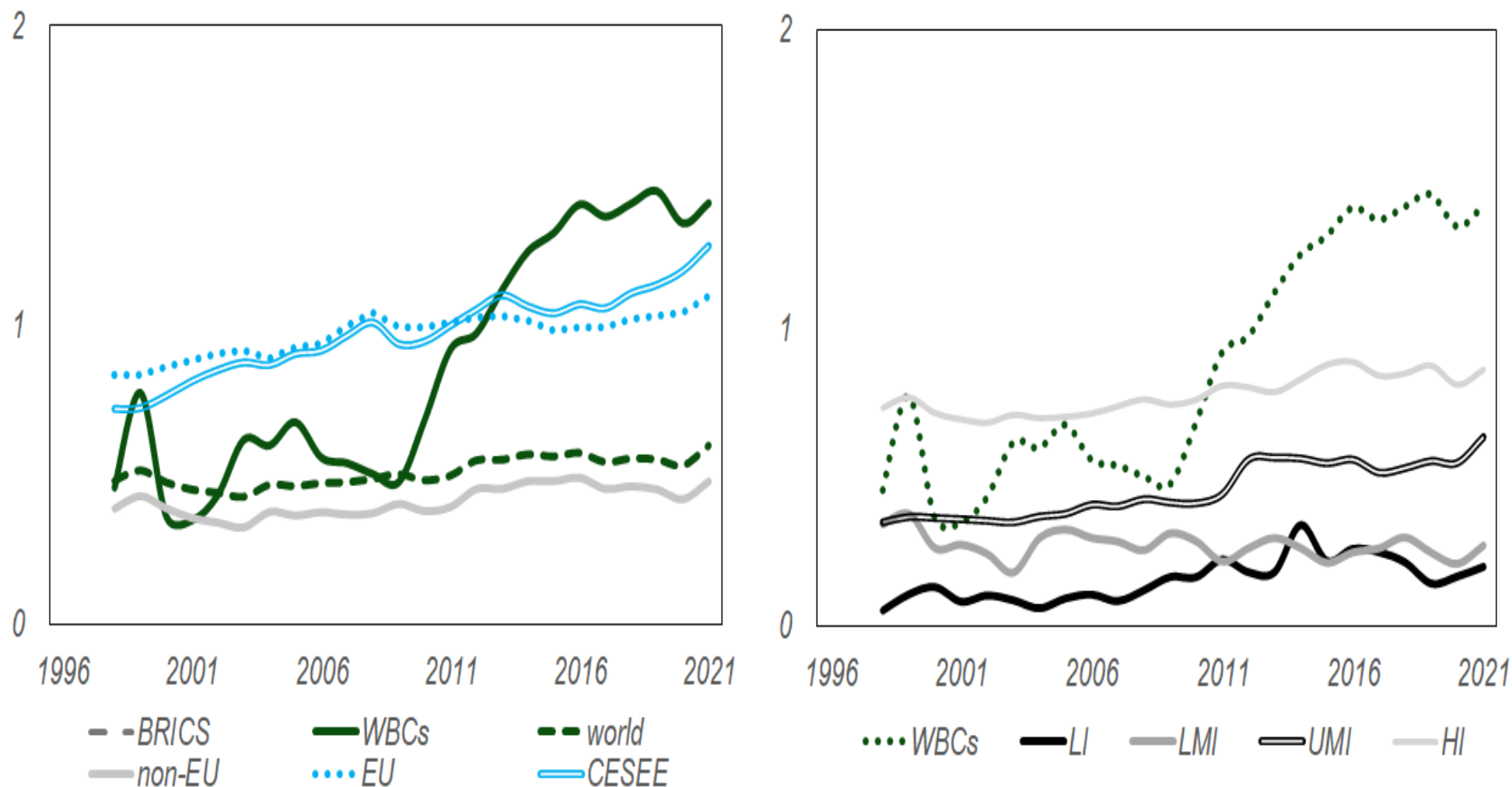
Source: World Bank; Authors' Calculations.

Figure 14. WBCs LCT trade partners on regional basis.



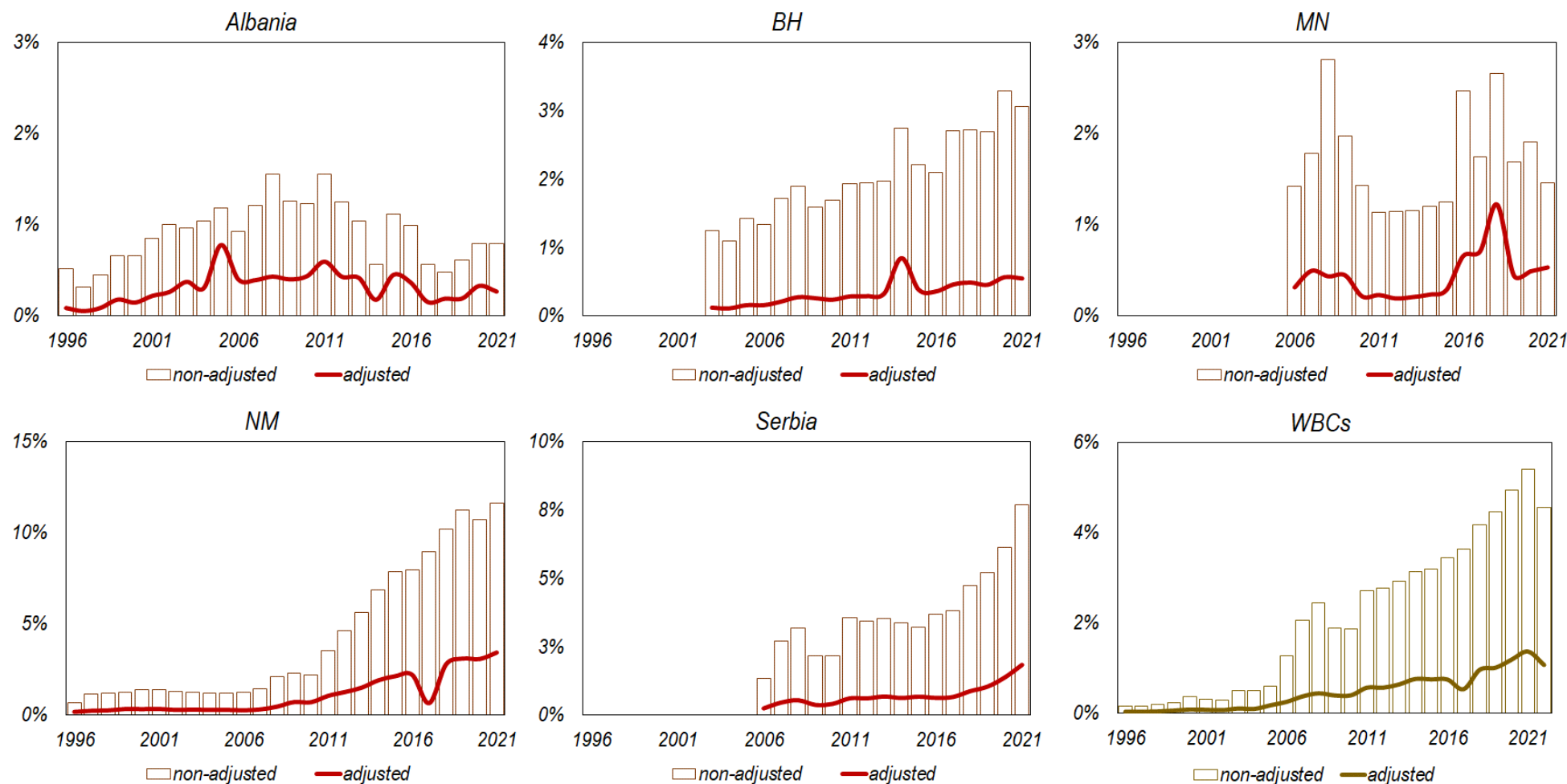
Source: World Bank; Authors' Calculations.

Figure 15. Comparative Advantages on LCT products WBCs versus other group of countries.



Source: Authors' Calculations.

Figure 16. WBCs trade performance (to GDP ratio) as adjusted for geographical distance.



Source: World Bank; Authors' Calculations.

Table 1. Results of cross-section dependence test using annual data 2006 - 2022.

Variable	Cross-section independence Approach								Total panel obs.
	Pesaran CD		Breusch-Pagan LM		Pesaran scaled LM		Bias-corrected scaled LM		
	T-Stat	P-Val	T-Stat	P-Val	T-Stat	P-Val	T-Stat	P-Val	
GDP _r	10.2	[0.000]	105.7	[0.000]	21.4	[0.000]	21.2	[0.000]	85
GCF	2.4	[0.017]	46.3	[0.000]	8.1	[0.000]	8.0	[0.000]	85
PROD	7.5	[0.000]	70.4	[0.000]	13.5	[0.000]	13.3	[0.000]	85
PRICE	10.5	[0.000]	112.0	[0.000]	22.8	[0.000]	22.6	[0.000]	85
MPR	7.8	[0.000]	76.6	[0.000]	14.9	[0.000]	14.7	[0.000]	85
EX	11.8	[0.000]	140.3	[0.000]	29.1	[0.000]	29.0	[0.000]	85
BL	9.5	[0.000]	94.7	[0.000]	18.9	[0.000]	18.8	[0.000]	85
FSI	2.6	[0.010]	81.3	[0.000]	15.9	[0.000]	15.8	[0.000]	79
TT_	5.2	[0.000]	55.1	[0.000]	10.1	[0.000]	9.9	[0.000]	85
MT	4.4	[0.000]	68.8	[0.000]	13.1	[0.000]	13.0	[0.000]	85
ENV _T	-0.2	[0.826]	41.2	[0.000]	7.0	[0.000]	6.8	[0.000]	85
LCT _T	1.2	[0.222]	61.1	[0.000]	11.4	[0.000]	11.3	[0.000]	85
CAET	-0.8	[0.406]	31.3	[0.001]	4.8	[0.000]	4.6	[0.000]	85
CALCT	0.2	[0.852]	35.4	[0.000]	5.7	[0.000]	5.5	[0.000]	85
EMP	12.6	[0.000]	158.9	[0.000]	33.3	[0.000]	33.1	[0.000]	85
TTERMS	1.4	[0.152]	16.3	[0.012]	3.0	[0.003]	2.8	[0.005]	66
BALET	6.3	[0.000]	44.5	[0.000]	7.7	[0.000]	7.6	[0.000]	85
BALLCT	2.6	[0.009]	15.5	[0.115]	1.2	[0.218]	1.1	[0.283]	85
HHIT	1.6	[0.104]	107.8	[0.000]	21.9	[0.000]	21.7	[0.000]	85

Note: non-zero cross-section means detected in data; Cross-section means were removed during computation of correlations; Periods included 17; Cross-sections included 5; ^a based on the *** p< 0.01; ** p< 0.05; * p< 0.10, [Null hypothesis: Unit root];

Source: Author's calculations.

Table 2. Results of the Residual Cross-Section Dependence Test and heterogeneity using annual data 2006 - 2022.

Tests			[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
			TT	MT	ENVT	LCTT	CAENV	CALCT	TTERMS	EMP	BALET	BALLCT	HHIT
			Equation [1]										
GDP _r	T-Statistics	Breusch-Pagan LM	31.5	41.9	34.0	33.1	33.6	34.2	16.0	42.9	34.7	32.9	35.8
		Pesaran scaled LM	4.8	7.1	5.4	5.2	5.3	5.4	2.9	7.4	5.5	5.1	5.8
		Bias-corrected scaled LM	4.6	7.0	5.2	5.0	5.1	5.3	2.8	7.2	5.4	5.0	5.6
		Pesaran CD	3.8	5.9	5.1	5.2	5.0	5.1	3.7	6.1	5.2	5.0	5.5
	Probability Value	Breusch-Pagan LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.01]	[0.00]	[0.00]	[0.00]	[0.00]
		Pesaran scaled LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
		Bias-corrected scaled LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.01]	[0.00]	[0.00]	[0.00]	[0.00]
		Pesaran CD	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
			Equation [2]										
PRO	T-Statistics	Breusch-Pagan LM	51.6	51.2	57.8	57.8	56.3	52.0	14.3	52.5	52.8	49.2	51.9
		Pesaran scaled LM	9.3	9.2	10.7	10.7	10.4	9.4	2.4	9.5	9.6	8.8	9.4
		Bias-corrected scaled LM	9.2	9.0	10.5	10.5	10.2	9.2	2.3	9.4	9.4	8.6	9.2
		Pesaran CD	6.8	6.6	7.3	7.3	7.2	6.8	3.4	6.7	6.8	6.7	6.7
	Probability Value	Breusch-Pagan LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.03]	[0.00]	[0.00]	[0.00]	[0.00]
		Pesaran scaled LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.02]	[0.00]	[0.00]	[0.00]	[0.00]
		Bias-corrected scaled LM	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.02]	[0.00]	[0.00]	[0.00]	[0.00]
		Pesaran CD	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]	[0.00]
			Equation [3]										
GCF	T-Statistics	Breusch-Pagan LM	8.5	10.7	8.9	15.2	11.1	12.3	9.4	13.7	13.4	19.0	12.2
		Pesaran scaled LM	-0.3	0.2	-0.3	1.2	0.3	0.5	1.0	0.8	0.8	2.0	0.5
		Bias-corrected scaled LM	-0.5	0.0	-0.4	1.0	0.1	0.4	0.9	0.7	0.6	1.9	0.3
		Pesaran CD	0.5	1.2	0.6	0.7	-0.2	0.5	1.4	0.8	0.7	1.1	0.7
	Probability Value	Breusch-Pagan LM	[0.58]	[0.38]	[0.55]	[0.12]	[0.35]	[0.27]	[0.15]	[0.19]	[0.20]	[0.04]	[0.27]
		Pesaran scaled LM	[0.74]	[0.87]	[0.80]	[0.24]	[0.80]	[0.61]	[0.33]	[0.41]	[0.44]	[0.04]	[0.61]
		Bias-corrected scaled LM	[0.63]	[1.00]	[0.68]	[0.31]	[0.92]	[0.72]	[0.39]	[0.51]	[0.55]	[0.06]	[0.73]
		Pesaran CD	[0.61]	[0.24]	[0.54]	[0.51]	[0.85]	[0.59]	[0.16]	[0.45]	[0.46]	[0.26]	[0.48]

Null hypothesis: No cross-section dependence (correlation) in weighted residuals; Periods included: 17; Cross-sections included: 5; Total panel (unbalanced) observations: 75; Test employs centred correlations computed from pairwise samples

Source: Author's calculations.

Table 3. Results of the effect of trade (environmental) globalization on (GDPR) using GLS appraoch.

Explanatory Variables	[A]				[B]				[C]		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>C</i>	2.896**	3.201	4.421*	4.255*	4.423*	4.422*	5.168*	4.414*	4.423**	4.458*	4.414*
<i>PRICE</i>	0.021	0.021	0.019	0.008	0.018	0.018	0.023	0.019	0.018	0.018	0.015
<i>MPR</i>	-0.023	-0.064	-0.162**	-0.269**	-0.154***	-0.158	-0.167**	-0.146	-0.164**	-0.167**	-0.162**
<i>EX</i>	-0.058	-0.165	-0.246**	-0.249**	-0.261**	-0.246***	-0.234	-0.163	-0.237***	-0.244**	-0.247**
<i>BL</i>	0.222	0.164	0.157	0.159	0.148	0.139	0.084	0.540	0.148	0.146	0.129
<i>BSI</i>	0.777**	0.820**	0.986*	0.992*	0.986*	0.971*	0.732***	0.761**	0.958*	0.962*	0.969*
<i>TT</i>	0.527**										
<i>MT</i>		0.261***									
<i>ENV</i>			0.052								
<i>LCTT</i>				0.034							
<i>CAET</i>					0.097						
<i>CALCT</i>						0.039					
<i>EMP</i>							0.727				
<i>TTERMS</i>								1.109			
<i>BALET</i>										-0.022	
<i>BALLCT</i>											-0.008
<i>HHIT</i>											-0.378
<i>Root MSE</i>	0.45	0.45	0.42	0.43	0.42	0.42	0.40	59	0.45	0.42	0.41
<i>Included Obs.</i>	75	75	75	70	75	75	75	0.30	75	75	75
<i>Ramsey RESET Test</i>	0.09	0.41	0.67	0.79	0.66	0.85	0.57	0.35	0.90	0.57	0.65

Estimation Techniques includes: Panel Method: Generalized Linear Model (Newton-Raphson / Marquardt steps);
Sample [2006 – 2022]; Dispersion computed using Pearson Chi-Square; Coefficient covariance computed using the Newey-West HAC method with
observed Hessian (Bartlett kernel, Newey-West fixed bandwidth = 4.0000). Probability Value range: * 1%; ** 5%, *** 10%;

Source: Author's calculations.

Table 4. Results of the effect of trade (environmental) globalization on (PRO) using GLS approach.

Explanatory Variables	[A]				[B]				[C]		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>C</i>	-0.015	-0.016	-0.018**	-0.016	-0.016**	-0.016	-0.024**	-1.845**	-0.014	0.195**	-0.017**
<i>PRICE</i>	0.003	0.004	0.005*	0.005**	0.581**	0.06***	0.005**	0.006**	0.04*	0.006**	0.005**
<i>MPR</i>	-0.026	-0.039	-0.038	-0.040	-0.039	-0.034	-0.036	-0.073	-0.38	-0.035	-0.041
<i>EX</i>	-0.061**	-0.029	-0.019	-0.021	-0.19	-0.023	-0.009	-0.042	-0.023	-0.020	-0.020
<i>BL</i>	0.042**	0.052**	0.096	0.051**	0.053*	0.049**	0.004	0.125**	0.042	0.026	0.052**
<i>BSI</i>	0.108**	0.140**	0.164**	0.160*	0.162*	0.166**	0.110	0.134***	0.162*	0.192*	0.160*
<i>TT</i>	0.092*										
<i>MT</i>		0.049									
<i>ENV</i>			0.015								
<i>LCT</i>				0.06							
<i>CAET</i>					0.04						
<i>CALCT</i>						0.015					
<i>EMP</i>							0.170*				
<i>TTERMS</i>								0.397**			
<i>BALET</i>	-0.018										
<i>BALLCT</i>											
<i>HHIT</i>											
<i>Root MSE</i>	0.09	0.09	0.09	0.09	0.09	0.10	0.09	0.85	0.09	0.09	0.09
<i>Included Obs.</i>	65	65	64	65	65	65	65	49	65	65	65
<i>Ramsey RESET Test</i>	0.89	0.70	0.76	0.41	0.44	0.51	0.39	0.76	0.70	0.86	0.29

Estimation Techniques includes: Panel Method: Generalized Linear Model (Newton-Raphson / Marquardt steps); Sample [2006 – 2022]; Dispersion computed using Pearson Chi-Square; Coefficient covariance computed using the Newey-West HAC method with observed Hessian (Bartlett kernel, Newey-West fixed bandwidth = 4.0000). Probability Value range: * 1%; ** 5%, *** 10%;

Source: Author's calculations.

Table 5. Results of the effect of trade (environmental) globalization on (GCF) using GLS approach.

Explanatory Variables	[A]				[B]				[C]		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>C</i>	-0.028	-0.033	-0.023	-0.023	-0.030	-0.028	-0.032	-0.032	-0.010	0.368**	-0.032
<i>PRICE</i>	0.009	0.002	0.07**	0.014*	0.011**	0.013**	0.013**	0.012**	0.007	0.013*	0.012**
<i>MPR</i>	-0.090	-0.107**	-0.110**	-0.127**	-0.09	-0.084	-0.114**	-0.137**	-0.096	-0.110**	-0.122**
<i>EX</i>	-0.113	-0.097	-0.060	-0.077	-0.036	-0.063	-0.041	-0.032	-0.080	-0.043	-0.043
<i>BL</i>	0.247*	0.2559*	0.212*	0.180*	0.275*	0.248*	0.256**	0.526*	0.156**	0.215*	0.263*
<i>BSI</i>	0.483	0.454	0.743*	0.562*	0.628**	0.601**	0.563	0.337	0.587*	0.632**	0.573**
<i>TT</i>	0.157										
<i>MT</i>		0.288*									
<i>ENVT</i>			0.284-								
<i>LCTT</i>				0.245*							
<i>CAET</i>					0.153*						
<i>CALCT</i>						0.081					
<i>EMP</i>							0.326				
<i>TTERMS</i>								0.396			
<i>BALET</i>										-0.187*	
<i>BALLCT</i>										-0.086**	
<i>HHIT</i>											-0.091
<i>Root MSE</i>	0.17	0.16	0.14	0.15	0.16	0.17	0.17	0.15	0.15	0.17	0.17
<i>Included Obs.</i>	65	65	65	65	65	65	65	48	65	65	65
<i>Ramsey RESET Test</i>	021	0.13	0.23	0.89	0.15	0.29	0.21	0.28	0.26	0.26	0.16

Estimation Techniques includes: Panel Method: Generalized Linear Model (Newton-Raphson / Marquardt steps); Sample [2006 – 2022]; Dispersion computed using Pearson Chi-Square; Coefficient covariance computed using the Newey-West HAC method with observed Hessian (Bartlett kernel, Newey-West fixed bandwidth = 4.0000); Probability Value range: * 1%; ** 5%, *** 10%;

Source: Author's calculations.

This paper provides some insight facts and analysis, on WBCs with a focus on:

- Trade globalisation (or de-coupling) in the aftermath of a series of shocks.
- The ability to increase trade exchanges for products and technology with direct impact in climate change.
- The effect of trade on economic growth, productivity and capital formation.

Results provide supportive evidences showing that trade:

- Increase the number of countries with which they carry out bilateral trade exchanges.
- A high and up-trends of trade globalisation (no de-coupling), **BUT** it is mostly regionally related (EU + CESEE).

With regards to environmental (low-carbon technology) products, results show that WBCs...

- Number of partner countries is low, **BUT** increasing.
- Trade flow volume is low, **BUT** increasing and higher than other regional countries, e.g. EU, HI countries.
- Is mostly regionally related than globally.
- Have not materialised their comparative advantages properly.

With regards to empirical analysis, in the case of WBCs, results support:

- The cross-sectional dependences of macroeconomic and trade patterns among WBCs.
- A positive trade – economic growth, upon which higher degree of trade is likely to boost faster growth.
- WBCs have strongly materialised the benefits of economic effects under the comparative advantage of trade theory. **BUT**, not as such with regards to environmental trade products and technologies.
- The ability to trade and trade patterns have not been properly translated into better productivity or capital formation, regardless of their positive effect.
- Economic activity remains still dependent on bank stability and financial support.

FUTURE research: Analyse empirically issues related to:

- A possible non-linear relationship between trade patterns and economic growth;
- Uses the Autoregressive Distributed Lag (ARDL) approach under non-conclusive results of URT.
- Investigate trade-growth nexus through means of tariff rate-related variable.

Thank you for your attention!!!

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