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DETERMINANTS OF ALBANIAN AGRICULTURAL EXPORT: THE GRAVITY MODEL APPROACH

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DEP WORKING PAPER SERIES
No. 3/2016

Nitra | 2016

Determinants of Albanian Agricultural Export: The Gravity Model Approach

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ABSTRACT

Albania has a sharp trade deficit with agricultural commodities. The focus of this study is the export side of agricultural trade and its aim is to analyse key determinants of agricultural export. It employs conventional gravity model covering Albanian export flows for the period 1996-2013. The Poisson Pseudo-Maximum Likelihood regression (PPML) is used to reveal effect of the key agricultural export variables such as market and economic size, transportation costs, RTAs, information costs, price stability, and institutional quality factors. Export flow increase with increasing domestic economic size (GDP). Moreover, agricultural export flows are determined by low transportation costs (distance), adjacency proximity (sharing common border) and price stability (inflation). RTA with neighbouring countries of the CEFTA 2006 has trade creating potential. Information costs (common language, stock of Diaspora) are found relatively insignificant in determining agricultural exports. Higher institutional quality of the importing country tends to facilitate Albanian agricultural exports. Main findings suggest that agricultural export has huge potential in Albania.

Keywords: agricultural trade, gravity model, panel data, Albania
JEL classification: Q17, Q18, F14, C23

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This work was supported by the Slovak Research and Development Agency under the contract No. APVV-15-0552. The authors also acknowledge financial support from the projects VEGA 1/0806/15, VEGA 1/0930/15, VEGA 1/0797/16.

INTRODUCTION

Albania initiated transition to market economy since the early 1990s. Transition from communism into free market system was unique and escorted with dramatic turbulences. Early period of market reforms is connected with drastic and profound structural changes of Albanian economic system. Price controls were lifted, markets were liberalized and privatization process initiated (McCarthy et al., 2009). Reforms resulted with outstanding economic growth between 1993 and 1996, marking highest growth rates comparatively to all transition economies. However, in 1997, flourishing financial pyramid schemes ruined both political and economic system (Korovilas, 1999). Collapse of pyramid investment schemes plunged Albania into deep economic crisis and civil unrest. Events from that period served to Albania as hardship lesson of market and institutional failure. Since then, fast and systematic recovery took place. Sustained economic growth of 2000s, among other factors, is a merit of integration into international markets. Improvement of trade links and injection of foreign investments into domestic economy fuelled development perspective of Albania.

Albania is an agricultural economy. Agriculture employs more than a half of the population and accounts about a quarter of output (Zahariadis, 2007; EC, 2014). Hence, it has a huge potential to become engine of economic growth and competitiveness in international markets (USAID, 2012). Despite its indisputable potential, agricultural sector in Albania faces significant challenges. Predominant constraints of agriculture include small and fragmented farms (average of 1.2 ha), migration from rural areas, underdeveloped irrigation system, low labour productivity, and limited technological level (USAID, 2012; EC, 2014). Interest for investment in agricultural sector remains low as well. Additional agricultural constraints are derived from the complex land reform (see Cungu and Swinnen, 1999; Deininger et al., 2012; Qineti et al., 2015). Majority of small farms in Albania are subsistent and agricultural production serves to home consumption. Empirical studies (i.e. McCarthy et al., 2009) reveal that farm-households cultivating staple crops place to the market only 4 to 8 percent of their production. The rest is used for self-consumption.

Studies utilizing aggregate trade flows in Albania (Xhepa and Agolli, 2004; Asllani, 2013; Fetahu, 2014; Sejdini and Kraja, 2014) report unexploited trade potential. They suggest that main constraints of Albanian foreign trade rest to domestic supply. Trade flows are determined by trade links with neighbouring countries, low transportation costs and cultural links. Moreover they put emphasis on non-tariff trade barriers such as market access, border procedures, free movement, development and dissemination of information. Albanian agricultural exports are found to be

influenced by the economic distance, size of the countries, cause of sea, closeness, taxes, freedom from corruption, freedom of investment, monetary freedom and trade freedom (Prendi et al., 2015). The main objective of this paper is to explain key determinants of agricultural export in Albania. The paper is organized as follows: the next section describes methodology of empirical estimation of the gravity model and data used. Then we present and discuss results of empirical estimation in the subsequent section. In the last section we summarize and draw conclusions.

To our knowledge, this study is one of the first attempts employing gravity model in determining main aspects of agricultural export in the case of Albania. Result of this study might serve to the trade and agricultural policy makers to draw policies that enhance efficient use of the endowed agricultural potential for export and mitigation of the sharp trade deficit in Albania.

METHODOLOGY AND MATERIALS

Gravity equation and model specification

The first authors applying gravity equation to analyse international trade flows were Tinbergen (1962) and Pöyhönen (1963) (in Martinez-Zarzoso and Nowak-Lehmann, 2003). Their model came out of Newton's theory of gravitation and was adjusted for the purpose of economy of trade. Since then, gravity equations have dominated empirical studies on international trade. In its basic form, the amount of trade between countries is assumed to be increasing in their sizes, as measured by national incomes of the countries, and decreasing in the costs of transportation between them (Cheng and Wall, 2005). Therefore, the basic form of the gravity equation is expressed as follows:

$$T_{ij} = \beta_0 \frac{Y_i^{\beta_1} Y_j^{\beta_2}}{D_{ij}^{\beta_3}}$$

where: T_{ij} indicates bilateral trade between country i and j; Y_i (Y_j) indicates the economic size of i (of j) measured by GDP; D_{ij} indicates the distance between the two countries. β_n are parameters of the model often estimated in its log-linear reformulation.

For the purpose of this study, we use the modified gravity model employed by McCallum (1995). It is adjusted for logarithmic form and allows adding supplementary variables:

$$\ln X_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln D_{ij} + \beta_4 \delta_{ij} + \varepsilon_{ij}$$

where: X_{ij} indicates trade flow between country i and j (in our case export); Y_i is economic size - GDP of i (Y_j of j); D_{ij} indicates distance between i and j; δ_{ij} is dummy variable for other determinants of trade; and ε_{ij} is a stochastic disturbance term. Parameters of the model are β_n.

The above equation is adopted to fit it to the gravity model for agricultural exports in Albania. Here we adjusted the basic form of the gravity model equation as follows:

$$\ln X_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln GDP_{PC\,i} + \beta_4 \ln GDP_{PC\,j} + \beta_5 \ln POP_i + \beta_6 \ln POP_j + \beta_7 \ln D_{ij} + \beta_8 Adj_{ij} + \beta_9 Land_{ij} + \beta_{10} Lang_{ij} + \beta_{11} Col_{ij} + \beta_{12} \ln Dia_{ij} + \beta_{13} RTA_{eu\,ij} + \beta_{14} RTA_{efta\,ij} + \beta_{15} RTA_{cefta\,ij} + \beta_{16} \ln Exr_{ij} + \beta_{17} Inf_{ij} + \beta_{18} Ope_{ij} + \beta_{19} Cor_{ij} + \beta_{20} Sta_{ij} + \beta_{21} Law_{ij} + \varepsilon_{ij}$$

The dependent variable X_{ij} is agricultural export from country i (Albania) to j. Independent variables are real GDP (Y); GDP per capita (GDP_{PC}); population size (POP); distance between i and j (D_{ij}); and dummies reflecting whether i and j share a land border Adj_{ij}; whether trade partners are landlocked or have access to the sea $Land_{ij}$; whether trade partners have common primary language $Lang_{ij}$; were part of a common colonial empire Col_{ij}; stock of Albanian Diaspora in partner countries Dia_{ij}; are both partners in EU regional trade agreement $RTAeu_{ij}$; are both partners in EFTA regional trade agreement $RTAefta_{ij}$; are both partners in CEFTA 2006 regional trade agreement $RTAcefta_{ij}$; bilateral exchange rate Exr_{ij}; inflation rate Inf_{ij}; openness to trade Ope_{ij}; and institutional variables such as control of corruption Cor_{ij}, political stability Sta_{ij} and rule of law Law_{ij}. And ε_{ij} is a stochastic disturbance term that is assumed to be well-behaved.

Estimation techniques

The choice of gravity equation estimator has been lively debated among the scholars dealing with performance of the gravity model. Prevalence of heteroscedasticity and zero bilateral trade flows in the standard empirical methods were the focus of criticism (Helpman et al., 2008; Westerlund and Wilhelmsson, 2009; Silva and Tenreyro, 2006). Hence, Silva and Tenreyro (2006) argue that standard empirical methods employed in estimating gravity equations are inconsistent and lead to biased results. They explain that the use of standard log-linear estimator suffers from the presence of heteroscedasticity, which in turn might yield biased estimates of the true elasticities. On the

other hand, various approaches have been employed in dealing with zero flows. Some authors suggest dropping zero flows from the sample (Linneman, 1966) or adding a constant to all trade flows to estimate log-linear equation (Rose, 2004).

Despite controversies and existence of the wide range of estimation techniques such as PPML (Silva and Tenreyro, 2006), Heckman model (Gomez-Herrera, 2013), FGLS (Martinez-Zarzoso, 2013), Helpman model (Helpman et al., 2008), Tobit model (Martin and Pham, 2008) etc., previous studies reveal that it is difficult to advocate a sole estimation technique as the best-performing. The choice of method should be based on both economic and econometric considerations (Linders and De Groot, 2006) including robust specification checks and tests (Martinez-Zarzoso, 2013).

For the purpose of this study, we adopted econometric approach using the Poisson Pseudo-Maximum Likelihood (PPML) estimator, as proposed by Silva and Tenreyro (2006, 2011). PPML provides a natural way to deal with zero values and is robust to different patterns of heteroscedasticity.

Data availability

The gravity model developed in this paper is focused on Albanian agricultural exports. It utilizes panel data of Albanian agricultural exports with 46 trade partner countries. Trade consists of bilateral trade flows with trade block countries EU-28, CEFTA 2006, EFTA and BRICS, including USA, Japan and Turkey. Data cover the period 1996-2013. Data on agricultural trade explain 92% of Albanian agricultural exports for the analysed period. Data on agricultural trade were obtained from the UNCTAD on SITC rev.3 classification, and expressed in million USD. Accordingly, population, GDP, inflation, exchange rate and trade openness data were acquired from the same source. Data on distance between capital cities and dummy variables such as common land border, common language and former colonizer were utilized from the CEPII database (Centre d'Etudes Prospectives et d'Informations Internationales). Lastly, data considering quality of institutions such as control of corruption, political stability and rule of law were obtained from the World Bank. Data on former Yugoslav countries (Serbia, Montenegro and Kosovo) are available from the year 2005. Therefore, for the period from 1996-2004 they are aggregated for these countries and evidenced by UNCTAD under the common account of the former Yugoslavia.

RESULTS AND DISCUSSION

Trade liberalization and trade policy in Albania

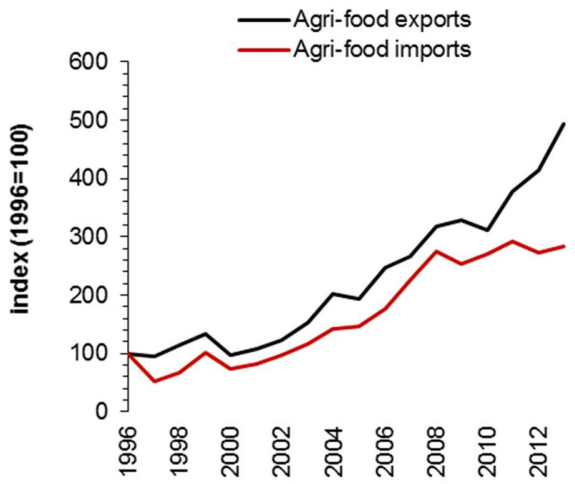
Albania has adopted a liberal trade regime from the very beginning of its economic transition. Trade liberalization was among the first steps of transition reforms. The process of trade liberalization has been intensified particularly after the accession of Albania in WTO in the year 2000 (Government of Albania, 2014). Membership in WTO induced deep reforms in legislation and trade policies in compliance with WTO guiding principles. The main objectives of Albanian trade policy are coherent with WTO principles and therefore guarantee the absence of quantitative restrictions on imports and exports, export subsidies, any kind of tax on exports and export bans (WTO, 2016). Further steps of trade liberalization followed Albanian involvement in the regional integration through a network of bilateral Free Trade Agreements (FTAs) with its regional partners. Later on, bulk of bilateral FTAs melted into the creation of Regional Trade Agreement (RTA), known as renewed Central Europe Free Trade Agreement (CEFTA 2006). This RTA incorporated group of countries from Southeast Europe (Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Montenegro, Moldova and Serbia) and entered in force in 2007. The map of liberalized trade agreements has been further extended by the signature of FTA with Turkey in 2008. In 2008, Albania signed another FTA with European Free Trade Agreement Association countries (EFTA; Norway, Switzerland, Iceland and Lichtenstein). FTA with EFTA countries entered in force in 2011. Most important, since 2009, Albania is implementing the Association and Stabilization Agreement (SAA) with the European Union (EU). Meanwhile the free trade agreement, which is integral part of SAA, is in force from 2006. However, early roots of trade liberalization with the EU date from 1999. Since then, Albania benefited from Autonomous Trade Preferences with the EU, granting duty-free access to EU market for nearly all Albanian products (excluding only wine, sugar, certain beef products and certain fisheries products, which enter the EU under preferential tariff quotas, as negotiated under the SAA). Summing up, Albanian trade is operating in free trade regime with EU, EFTA, Turkey, and its neighbouring CEFTA 2006 countries.

Agricultural trade in Albania

Albania is endowed with natural and climatic conditions such as fertile land and suitable clime for agricultural production. Abundance of natural resources combined with low labour costs provides

good grounds for intensification of labour intensive agricultural activities. Moreover, geographical layout, proximity to the EU market, and access to sea transport make Albanian export able to compete in terms of low transport costs. Therefore, agriculture fulfils preconditions to excel Albanian export and shrink sharp trade deficit. Despite its great potential, Albania remains a country with low agricultural exports and high dependency on imports. Since the early period of transition, agricultural exports marked a significant growth. Between the period 1996 and 2013 the volume of agricultural exports increased from 32.4 million USD to 171.3 million USD. Data on Albanian agricultural trade (Figure 1) reveal that since 1996 agricultural exports marked over a five-fold increase, while imports rose at slower pace (3-times). Despite such impressive growth, data from 2013 suggest that agricultural exports/import coverage rate is only 20%, meaning that import to export ratio is as high as 5:1.

Figure 1 Growth of Albanian agricultural trade



Source: UNCTAD, own elaboration

Destination of Albanian agricultural export

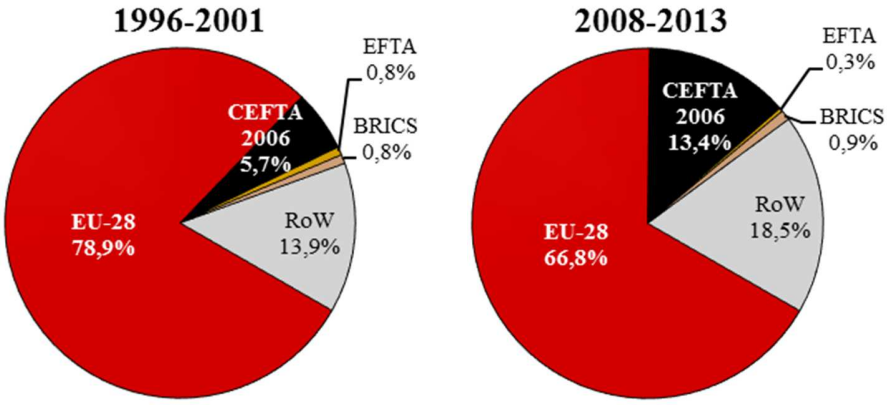
European Union is the main economic and trade partner for Albania since the beginning of transition process. Among others, strong trade linkages are reflected in the case of Albanian agricultural export destinations. The average share of agricultural exports to EU-28 marks two thirds (66.8%) of total agricultural exports for the period 2008-2013 (Figure 2). A slight decline in the share of agricultural exports to EU is directly affected by the global crisis of 2008-2009. According to ACCIT (2013) crisis in Italy and Greece and drastic decline of domestic demand in

both neighbouring countries had a direct impact in the slowdown of Albanian exports. Moreover, our estimations confirm that this is particularly true in the case of agricultural exports. Before the crisis (2007) the share of agricultural exports to Italy was 40.0% while in 2013 it dropped at 35.1%. Similar outcome took place with agricultural exports to Greece, a fall from 10.5% in 2007 to 8.7% in 2013.

On the other hand, trade links with the majority of CEFTA 2006 countries have been well established even before the free trade agreement entered in force. Share of agricultural export to the group of neighbouring South East European countries is 13.4%. Moreover, EC (2014) suggests that Albanian export potential to these countries is much higher. Establishment of the CEFTA 2006 has particular merits in lowering technical barriers, but remains behind in releasing administrative barriers (for example customs procedures), as well as dealing with barriers in the area of sanitary and phytosanitary measures.

EFTA is inferior agricultural export partner to Albania. Total share of agricultural export to EFTA countries is incremental, accounting for 0.3% of total agricultural export. Unattractiveness of Albanian agricultural exports to this group of economies reflects high transport costs due to the large distance between EFTA members and Albania. Similarly to the trade pattern with EFTA, agricultural trade with informal trading block of BRICS countries (Brazil, Russia, India, China and South Africa) is very low. Total agricultural exports to BRICS during the period 1996-2013 were statistically insignificant (less than 1%) or 13.7 million USD.

Figure 2: Albanian agro-food exports by trading blocks at the beginning and at the end of the analysed period



Source: UNCTAD, own elaboration

Empirical results of the gravity model estimations

We estimated 5 gravity models for Albanian agricultural exports. The difference is in the specification of explanatory variables. Due to possible correlation between institutional variables (*Cor*, *Sta*, *Law*), models 1-3 consider only one of these tree variables. Model 4 contains all of them but does not consider exchange rate. Model 5 contains all explanatory variables as described in the Methodology (including exchange rate). The models are also extended by trend variable (*Year*). Results of the gravity model estimations are presented in Table 1.

Table 1: Results of the gravity model estimations – Albanian agricultural export

(Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1)

Model 1 (observations 657)	*ln*GDP imp	*ln*GDP exp	*ln*GDPpc imp	*ln*GDPpc exp	*ln*POP imp	*ln*POP exp	*ln*DIST	
	6.336***	23.15**	-5.358**	-23.07**	-5.577**	3.474	-1.183***	
	(2.379)	(10.33)	(2.338)	(9.976)	(2.372)	(2.820)	(0.0885)	
	Adj	Land	Lang	Col	*ln*Dia	RTAeu	RTAefta	RTAcefta
	0.841***	0.364**	0.276	0.990***	-0.00616	-0.115	-1.194***	1.025***
	(0.142)	(0.142)	(0.230)	(0.187)	(0.00894)	(0.140)	(0.344)	(0.284)
	*ln*Exr	Inf	Ope	Cor	Sta	Law	Year	Constant
	-	-0.0107**	-0.00500**	-0.277***	-	-	0.0919***	-205.1***
		(0.00427)	(0.00225)	(0.0879)			(0.0269)	(76.27)

Model 2 (observations 653)	*ln*GDP imp	*ln*GDP exp	*ln*GDPpc imp	*ln*GDPpc exp	*ln*POP imp	*ln*POP exp	*ln*DIST	
	5.634***	25.80**	-4.801**	-25.57**	-4.786**	1.963	-1.366***	
	(2.099)	(10.39)	(2.078)	(10.03)	(2.102)	(2.793)	(0.0623)	
	Adj	Land	Lang	Col	*ln*Dia	RTAeu	RTAefta	RTAcefta
	0.951***	0.325**	-0.120	0.886***	-0.00780	-0.190	-1.323***	1.083***
	(0.130)	(0.139)	(0.232)	(0.176)	(0.00866)	(0.131)	(0.335)	(0.200)
	*ln*Exr	Inf	Ope	Cor	Sta	Law	Year	Constant
	-	-0.00507	-0.00545**	-	0.0190	-	0.0964***	-209.6***
		(0.00423)	(0.00221)		(0.135)		(0.0262)	(74.59)

Model 3 (observations 657)	*ln*GDP imp	*ln*GDP exp	*ln*GDPpc imp	*ln*GDPpc exp	*ln*POP imp	*ln*POP exp	*ln*DIST
	5.508**	24.15**	-4.598**	-23.95**	-4.731**	2.632	-1.252***
	(2.226)	(10.47)	(2.201)	(10.12)	(2.221)	(2.833)	(0.0824)
	Adj	Land	Lang	Col	*ln*Dia	RTAeu	RTAefta	RTAcefta
	0.900***	0.377***	0.143	0.891***	-0.00538	-0.129	-1.302***	0.911***
	(0.145)	(0.143)	(0.234)	(0.170)	(0.00895)	(0.140)	(0.338)	(0.254)
	*ln*Exr	Inf	Ope	Cor	Sta	Law	Year	Constant
	-	-0.00867*	-0.00608***	-	-	-0.209**	0.0881***	-197.6**
		(0.00458)	(0.00216)			(0.106)	(0.0271)	(76.81)

Model 4 (observations 653)	*ln*GDP imp	*ln*GDP exp	*ln*GDPpc imp	*ln*GDPpc exp	*ln*POP imp	*ln*POP exp	*ln*DIST
	7.678***	23.64**	-6.695***	-23.70**	-6.865***	3.905	-1.221***
	(2.300)	(10.18)	(2.261)	(9.813)	(2.301)	(2.773)	(0.0890)
	Adj	Land	Lang	Col	*ln*Dia	RTAeu	RTAefta	RTAcefta
	0.797***	0.281**	0.196	1.100***	-0.0102	-0.155	-1.036***	1.386***
	(0.151)	(0.139)	(0.241)	(0.207)	(0.00863)	(0.142)	(0.344)	(0.239)
	*ln*Exr	Inf	Ope	Cor	Sta	Law	Year	Constant
	-	-0.00994**	-0.00278	-0.687***	-0.0127	0.578***	0.106***	-227.4***
		(0.00410)	(0.00221)	(0.163)	(0.148)	(0.214)	(0.0268)	(73.41)

Model 5 (observations 653)	*ln*GDP imp	*ln*GDP exp	*ln*GDPpc imp	*ln*GDPpc exp	*ln*POP imp	*ln*POP exp	*ln*DIST
	8.992***	21.86**	-8.066***	-21.82**	-8.170***	5.236**	-1.128***
	(2.221)	(9.478)	(2.188)	(9.140)	(2.224)	(2.611)	(0.0833)
	Adj	Land	Lang	Col	*ln*Dia	RTAeu	RTAefta	RTAcefta
	0.799***	0.556***	0.159	0.915***	-0.00667	-0.267**	-1.115***	1.347***
	(0.150)	(0.136)	(0.205)	(0.201)	(0.00832)	(0.136)	(0.311)	(0.246)
	*ln*Exr	Inf	Ope	Cor	Sta	Law	Year	Constant
	0.194***	-0.0136***	-0.000954	-0.680***	-0.0341	0.443**	0.0990***	-215.0***
	(0.0256)	(0.00371)	(0.00198)	(0.160)	(0.102)	(0.197)	(0.0255)	(69.02)

Source: own calculations

Results of our gravity models reveal that economic size of the both exporting and importing country are significant variables in explaining Albanian agricultural export. Hence, agricultural export should increase with an increase of importer's economic size. Moreover, results indicate that domestic economic size has robust positive coefficient (despite lower statistical significance) compared to importer's economic size. This outcome suggests that Albanian productive potential has higher influence on agricultural export facilitation compared to absorbing potential of the importing partner (see Koo et al., 1994).

In all five estimated models, the coefficient of importer's GDP per capita is negative and significant. This result suggests that increase in GDP per capita of the importing country causes decrease of demand for Albanian agricultural export. Similarly, increase in Albanian GDP per capita causes decline in agricultural exports. The strong negative coefficient is attributed to the increased domestic individual income in Albania during the observed transition period. Ceteris paribus, increase in income enables domestic market to absorb a greater portion of agricultural production and reduces surpluses for export (see Hatab et al., 2010). The coefficient of market (population) size of partner country has negative sign and is significant in all models. It indicates that importer's demand for Albanian export tends to decline when the population of importing country rises (see Martinez-Zarzoso and Nowak-Lehman, 2003).

As expected, results of this study illustrate that distance has negative impact on Albanian agricultural exports. This outcome is typical for traditional gravity model analysis, since distance is expected to reduce export. Increasing geographical distance between the capital city of Albania (Tirana) and capitals of importing countries means higher transport costs and decreases Albanian agricultural export. Moreover, theory suggests that transport costs are higher with landlocked trading partners and lower costs are associated for neighbouring countries (see Anderson and Van Wincoop, 2001; Jansen and Piermartini, 2009). Results of our study affirm that acceleration of Albanian agricultural export is positively linked with countries sharing common border.

We augmented the gravity model with historical, cultural and migrant stock dummies aiming to capture information costs. Results indicate significant and strong positive explanatory power between Albanian agricultural export flows and links with former colonizer. On the other hand, despite the positive sign of the coefficient, common language is not statistically significant variable. Moreover, despite some theoretical grounds suggesting that larger migrant stocks are associated with higher trade flows (see Gould, 1994; Bryant et al., 2005; Parsons, 2005), results of

our estimates indicate that Albanian Diaspora living in importing partners is not significant variable for agricultural exports.

Findings of this study suggest ambiguous outcome related to the effect of FTAs on Albanian agricultural export. Results show relatively insignificant impact of the FTA with EU-28 and export diversion effect with EFTA. On the other hand, free trade agreement with CEFTA 2006 countries had significantly greater positive impact and export creating effect. Findings of Kastrati and Shehaj (2015) indicate that the GDP variables are significant and have positive effects on Albanian exports and imports, while the distance between the countries has negative effect. The dummy of common border is also significant, indicating that common language, culture and geographical proximity have a positive impact on trade. In their study trade agreements were not found to be significant determinants of Albanian trade flows.

The exchange rate volatility has a significant positive coefficient (see model 5), indicating that depreciation in Albanian Lek (ALL) against the currencies of partner countries facilitates agricultural exports. Moreover, price instability in the importing country has negative effect on agricultural export flow from Albania.

Lastly, gravity models often predict that quality level of institutions of the importer and the exporter have a positive impact on the amount of trade between them (Linders et al., 2005). Therefore, institutional environment is commonly defined as a significant factor in reducing level of uncertainty (Jansen and Nordås, 2004). Results of our estimates confirm the expected impact of institutional variables such as corruption, political stability and rule of law. High perception of corruption in the importing country influences agricultural export negatively. Moreover, importing partners with advanced rule of law tend to attract Albanian agricultural exports.

Our gravity analysis for Albanian agricultural export leads to comparable results as models for other countries. A study of determinants of Turkish agricultural exports to the European Union (Erdem and Nazlioglu, 2008) found that Turkish agricultural exports to the EU are positively correlated with the size of the economy, the importer population, the Turkish population living in the EU countries, the non-Mediterranean climatic environment, and the membership to the EU-Turkey Customs Union Agreement while they are negatively correlated with agricultural arable land of the EU countries and geographical distance between Turkey and the EU countries. Results

from Albania show, in contrary, that exporter's Diaspora is not a significant variable for export of agricultural products.

Trade creating effect of RTAs was confirmed by Korinek and Melatos (2009). Their gravity model for members of three regional trade agreements suggests that the creation of AFTA (ASEAN Free Trade Agreement), COMESA (Common Market for Eastern and Southern Africa) and MERCOSUR (Southern Cone Common Market) has increased trade in agricultural products between the RTAs countries. They also found that in some cases, lack of transport and communications infrastructure, in addition to supply constraints, lessens the effect of the RTAs on trade flows. Besides RTAs, preferential trade policies can also help to support international trade (Cipollina et al., 2010). Most developing countries can export to the European Union and the United States with preferential market access. The results show (Cipollina et al., 2010) that preferential schemes have a significant impact on trade in terms of margins and intensity, and such effect seems to be stronger in the case of EU preferences, although with significant differences across products.

On the other side, Freund and Rocha (2010) investigated the effects of transit, documentation, and ports and customs delays on Africa's exports. They argue that transit delays have the most economically and statically significant effect on exports. Another barrier of trade can be product standards of destination countries. Evidence of impacts of private food and agriculture standards in the EU on trade of developing countries shows (Shepherd and Wilson, 2013) that internationally harmonized EU standards tend to have weak, or even slightly positive, trade impacts, where as non-harmonized standards - those that are unique to the EU - tend to be trade inhibiting. Detailed analysis of impacts of non-tariff trade measures and the possible Transatlantic Trade and Investment Partnership between the EU and the US can be found in European Parliament Study (2014). The study claims that trade in the agri-food sector is still significantly affected by trade barriers. The negative impacts of tariffs and non-tariff measures are more pronounced in EU-US bilateral trade as compared to other trade flows. The study suggests that the Partnership and elimination of barriers would increase EU agri-food exports to the US by about 60% and EU imports from the US by about 120% by 2025.

According to gravity model for Egypt's agricultural exports (Hatab et al., 2010) 1% increase in Egypt's GDP results in more than 5% increase in its agricultural export flows. In contrast, the increase in Egypt's GDP per capita causes exports to decrease, similarly as in our model. Moreover,

the exchange volatility has positive coefficient (depreciation in Egyptian Pound stimulates agricultural exports) and transportation costs have a negative influence on Egyptian agricultural exports. The same outcome of exchange rate volatility can be observed in the case of Hungarian agricultural exports (Fogarasi, 2011). Other variables, such as population and income (GDP) of export destination countries have positive sign, while distance from Hungary has a negative one.

The impact of transaction costs represented by communication costs (IT services) on bilateral trade in agricultural and food products in OECD countries was examined by Bojnec and Ferto (2009). Results confirmed significant impact of communication costs on trade in agricultural and to a lesser extent in food products. The gravity models also confirmed importance of the economy size, level of development in importer countries, and trade distance. The other traditional gravity variables like contiguity, language and regional free trade agreements have significant impacts in the majority of analysed cases.

Factors influencing bilateral trade among the Western Balkan countries were identified in the work of Trivic and Klimczak (2015). They considered geographical, economic or political determinants as well as factors constituting cultural, communicational and historical proximity between countries. Their results differ from traditional result gained from gravity analysis in the way that the strongest influence on trade values were exhibited by variables representing ease of a direct communication and similarity of religious structures. In addition, war and one-year-post-war effect showed a strong and statistically important influence. The authors therefore conclude that non-economic factors in the region of the Western Balkans play the most important role in determining trade values between countries.

CONCLUSION

The paper employs gravity model approach to analyse main determinants of agricultural export in Albania. It utilizes Albanian agricultural export flows with major trading partners for the period 1996-2013. The results show that export flow increases with increasing economic size (GDP), suggesting higher impact of Albanian productive potential comparatively to the absorbing potential of importing partners. On the other hand, increase of GDP per capita (both Albanian and its importer partners') causes decline in the export flows. Ceteris paribus, growth in domestic demand, resulting from increase in income, leads to reduction of agricultural export. As expected, findings of this study suggest that increasing distance (transportation costs) is associated with reduction of Albanian agricultural export flows. Information costs, represented by cultural links and migrant stock dummies, are found insignificant variables to facilitate export flows. Importer's price (inflation) and exchange rate instability have negative effect on Albanian agricultural export. Results depict that FTA with CEFTA 2006 countries has trade creating, while FTA with EU and EFTA trade diverse effect. Arguably, trade links with CEFTA members have earlier roots because of geographical proximity. Stability and quality of institutions in importing countries tend to attract Albanian agricultural exports. Findings of this study are important for trade and agricultural policy makers aiming to promote Albanian agricultural exports. Trade policies should be aimed to support trade with large economies and neighbouring countries, to extend the coverage of RTAs for non-tariff barriers of trade and to liberalise trade with other counties (which is a mutual process). Thanks to the potential of Albanian agriculture, support of export seems to be a policy complementary to promotion of domestic products in the domestic market.

In case of joining the EU, joining also the monetary union might become a tricky question for Albanian agri-food exporters because of the positive effect of exchange rate volatility on agricultural exports, particularly by keeping in mind that the accession to the EU will not change the current trade conditions too much and will have therefore little influential effect.

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