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Western Balkan's trade with the EU and CEFTA-2006: Evidence from Macedonian data

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Abstract

The objective of this paper is to empirically examine the determinants of bilateral trade of Macedonia, with particular emphasis on the trade with the EU and CEFTA-2006 countries. The standard Gravity model is used to measure the determinants of the bilateral trade in a panel framework. Results suggest that Macedonian GDP per capita and foreign GDP per capita play significant role in explaining bilateral trade. When Macedonian trade with EU is investigated only, then domestic income has larger magnitude than compared to the entire sample. Importantly, no additional gains have been approximated from FTAs and from CEFTA-2006, in particular. Potential explanation of this can be the still existent non-tariff barriers across the SEE countries, in terms of the technical, sanitary and phyto-sanitary barriers to trade, the time and costs to export and import, improvement of infrastructure related to trade and so on.

Keywords: bilateral trade, Gravity model, Macedonia, non-tariff barriers

JEL classification: F10, J51, P33

1. Introduction

Macedonia is a small and open economy with about 40% of the domestic production being exported. Hence, it is argued that sustainable growth of the Macedonian economy should be export-based, since the positive effect of trade-driven expansion in market size for a small country is greater than for a large country (Kathuria, 2008). In particular, small countries might benefit from economies of scale from having an access and being part of a larger marketplace, more efficient factor allocation,

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reduced macro-volatility, innovation and so on (Hallak and Sivadasan, 2009). Macedonia signed the Stabilisation and Association Agreement (SAA) with the EU in 2001, which envisaged trade liberalisation of 95% of the export to the EU. Later, in 2006, Macedonia entered the regional Central-European Free Trade Agreement (CEFTA), with the other Western Balkan's states, providing fully liberalised trade in manufactured goods and largely free trade in agricultural goods.

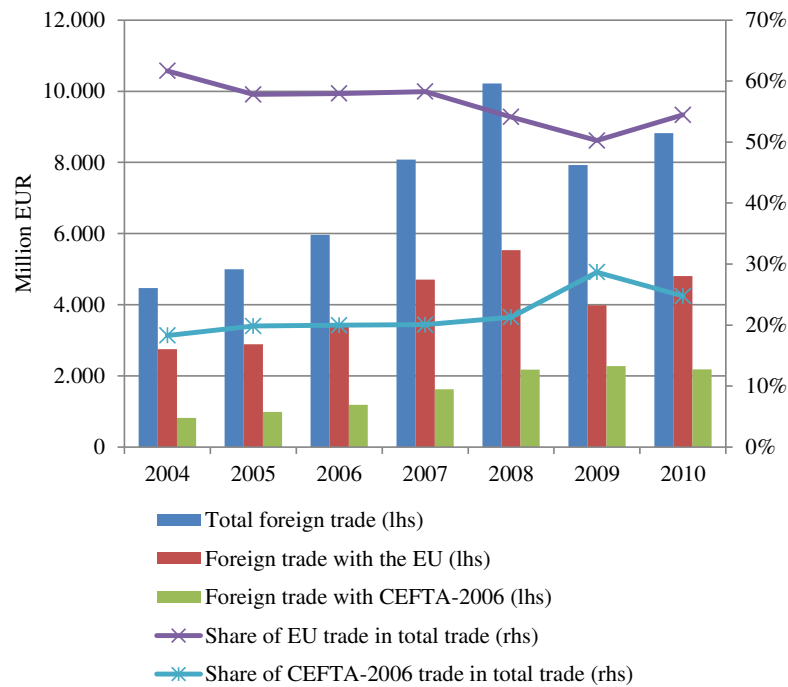
This study is among the first attempts to examine and empirically test the importance of the EU for Macedonian foreign trade (SAA), as well the potential benefits for Macedonia from the CEFTA-2006 membership. The paper is organized as follows: in the next section gives an overview of the stylized facts and the background literature. In the next section, we provide the theoretical background. Section 4 and 5 deal with the model in estimable form and data used, respectively. Section 6 presents methodology, whereas results and some discussion are offered in section 7. Last section concludes.

2. Stylised facts and background literature

The trade integration of Macedonia with the EU is quite large given that trade with EU-27 accounts for about 60% of total trade (Figure 1). Within the EU, Macedonia mostly trades with Germany, Greece and Italy, which account to nearly half of the total trade with the EU. Second largest trade partner of Macedonia is CEFTA-2006 that participates with about 25% in total foreign trade of Macedonia, wherein the largest trading partners remain Serbia and Kosovo, accounting for about two-thirds of the total trade with CEFTA-2006.

In terms of the preferential trade agreements, the country has so far signed two regional agreements: i) the Stabilisation and Association Agreement (SAA) with the EU, establishing political and economic conditionality for the development of bilateral relations with Western Balkan countries, and ii) the CEFTA-2006 agreement with countries from the South-Eastern Europe (SEE: Albania, Kosovo, Macedonia, Montenegro, Moldova, Croatia, Serbia and Bosnia and Herzegovina), which replaced the bilateral agreements that existed before.

Figure 1 - Macedonian foreign trade, 2004-2010



Source: Authors' own calculations based on data from State Statistical Office and Ministry of Finance

SAA was signed in 2001 and entered into force in April 2004. The EU announced that SAA would improve the existing autonomous trade preferences for the Western Balkan countries, and provide autonomous trade liberalisation for 95% of all their exports to EU. The exports of these countries, including Macedonia, to the EU are without quantitative restrictions or measures having equivalent effect and are exempted from customs duties and charges having equivalent effect, for all products, except a limited number of products such as baby beef, wine and fishery products. On the other hand, Macedonia accepted a complete abolition of quantitative restrictions and gradual reduction of its custom duties over a (maximum) period of 10 years, for industrial products, textile, steel, agriculture and processed agricultural products.

The CEFTA-2006 is a comprehensive free trade agreement (FTA) between SEE countries. It provides fully liberalised trade in manufactured goods and largely free trade in agricultural goods, aiming at supporting

trade and investment among member countries. The Agreement augmented previous 32 bilateral FTAs between SEE countries.

The trade of SEE countries with the EU or within CEFTA-2006 did not evoke considerable attention. Some studies include Christie (2002), Bussiere et al. (2005), Krizmanic (2007); Pjerotic (2008), Pere (2008); Družić et al. (2009); Jelisavac and Zirojevic (2009); Kikerkova (2009); Handjiski et al. (2010). Virtually all of these studies evaluate the SEE potential for trade and/or the potential of CEFTA-2006 and, in general conclude that the potential in the region has not been fully utilized not has CEFTA-2006 reached its full effect onto regional trade. Therefore, the present paper will give a contribution to the current literature by trying to quantify the trade effects of the SAA and CEFTA-2006 by using Macedonian data.

3. Theoretical framework

The Gravity model used in social sciences is a modified version of the Isaac Newton Law of Gravitation. It has been consistently used in modelling bilateral international trade flows and is usually referred to as a “workhorse for empirical studies” (Baier and Bergstrand, 2007), although it can be used to predict other flows, as well, such as flow of migration and foreign direct investment, people, information and so on (Martinoz-Zarzoso, 2003). In its simplest and conventional form, the gravity model estimates bilateral trade flows as a function of the income levels (GDP expressed in nominal terms) and the distance between the two trading partners. Domestic income level approximates supply and is assumed to push export, while the foreign income approximates demand and is assumed to pull export. Distance between the capital cities is used as a proxy for transportation costs and hence is considered as trade resisting factor (Clark *et al.* 2004).

Besides the above variables, the empirical specifications of the gravity model typically include (dummy) variables that support or reduce trade between two countries, such as common border, common language, land areas, cultural similarity, geographical position, historical links, and preferential trade arrangements. These variables tend to affect the transaction costs relevant for bilateral trade and have been proven to be statistically significant determinants of trade in various empirical applications (Anderson, 1979; Helpman and Krugman, 1985). The Linder

effect might also be incorporated in the model, meaning that countries on a similar development level (GDPs per capita) will trade more.

In addition to such conventional gravity models, generalised gravity models include price and exchange rate variables (As Clark *et al.* 2004). According to Pugh and Tyrrall (2000), the exchange rate effect on exports is undoubtedly negative, though some studies undermine the existence of two channels through which such effect is realised: the uncertainty and the political economy channel, which has implications for the policy action.

The omitted variable of great concern is termed “multilateral resistance” and is emphasized in the theoretical foundation of the gravity model (Anderson and van Wincoop, 2003; Frankel, 2008). This effect is defined as a function of unobservable equilibrium price indices, and depends on bilateral trade barriers and income shares of all the trading partners. Assume a given bilateral trade barrier between the countries. Then, higher barriers between them and their other trading partners would reduce the relative price of goods traded between them, raising bilateral trade. In empirical applications, the multilateral resistance indices can be conveniently proxied by individual country effects. Since we use panel approach, these aspects are accordingly included into the country-specific effect. Given that no study, to our knowledge, so far analysed Macedonian foreign trade in a panel context, this uprights to be among the most important contributions of this paper. We also include time effects in the model to control for time-specific factors such as world business cycles, global shocks and so on, as a commonly suggested strategy in the recent panel literature (see, for instance, Sarafidis *et al.* 2009).

4. Empirical model

The benchmark panel specification for the analysis of aggregate trade is similar to that used by Rose (2000) and Clark *et al.* (2004). We estimate the following model:

$$ltr_{ijt} = b_0 * lgdp_d_{ijt} + b_1 * lgdp_f_{ijt} + b_2 * rer_{ijt} + b_3 * dist_{ij} + b_4 * trade_{ijt} + b_5 * border_{ijt} + b_6 * language_{ijt} + b_7 * cefta_{ijt} + b_8 * linder_{ijt} + alpha_i + time_t + epsilon_{ijt}$$

where ltr_{ijt} denotes the logarithm of the aggregate trade (export and import) between Macedonia (country i) and country j at time t ; $lgdp_d_{ijt}$ is the logarithm of the GDP per capita of Macedonia; $lgdp_f_{ijt}$ is the

logarithm of the GDP per capita of the country j ; rer_{ijt} is the real bilateral exchange rate between Macedonia and country j ; $dist_{ij}$ is the physical distance between Macedonia and j ; $trade_{ijt}$ is a dummy variable taking a value of 1 if Macedonia has a trade agreement with country j at time t ; $border_{ijt}$ is a dummy variable taking a value of 1 if Macedonia shares a border with country j ; $language_{ij}$ is a dummy taking a value of 1 if Macedonia and j have a common language; $cefta_{ijt}$ is a dummy taking a value of 1 if country j belongs to CEFTA-2006; $linder_{ijt}$ is the quotient of the foreign and the domestic income capturing the Linder effect. α_i is the country-specific effect, to capture the above mentioned effects; $time_t$ is a time-specific effect, to capture any global influences like the Great Moderation and the 2008 economic crisis; while ϵ_{ijt} is *i.i.d* random shock and is assumed to be well-behaved.

5. Data

The study uses a panel dataset for the foreign between Macedonia and 39 trading partners over the period 1999:Q1-2009:Q4. Data for Macedonia are compiled from the State Statistical Office and the Central bank; data on the trade agreements are obtained from the Ministry of Economy. Data on the foreign-countries variables are collected from World Economic Outlook and International Financial Statistics. Distance is approximated by the physical distance between Skopje and country's j capital and is obtained from the World Wide Web. The bilateral real exchange rate is estimated through the product of the logarithm of the nominal bilateral exchange rate of the denar to the currency of country j , and the relative prices, expressed as the foreign price level divided by the domestic price level. For both price levels, consumer price index is taken. The common language variable is assigned to all countries from ex Yugoslavia plus Bulgaria.

6. Methodology

Given our earlier exposition, a reasonable strategy to follow is to run a fixed-effects (FE) or random-effects (RE) regression. Both have intuitive grounds and, hence, the distinction will be performed quantitatively. Namely, FE estimation is preferable when all countries of interest are included and when regressors are assumed to be correlated with the country-specific effects. Although all countries trade-partners of

Macedonia enter in the regression, still there might be a concern that not all right-hand side regressors are correlated with the unobserved country-specific effect (like the distance, border, language – which are fully exogenous). Hence, from that viewpoint, RE is needed. However, RE estimator has the drawback that conclusions cannot be generalized out of the sample, which is, to an extent, acceptable in this case.

Nevertheless, following the strand of the literature (Bahmani-Oskooee and Alse, 1993; Buffie, 1992; Dutt and Ghosh, 1996; Giles and Williams, 1999) discussing the export-led growth hypothesis, and, in particular its interference with the growth-led export hypothesis (Xu, 1996), there is a concern over the endogeneity of the domestic income in the gravity equation. Other variables are not suspect of being endogenous. Endogeneity of the regressors causes inconsistency of the usual OLS estimates and requires the use of instrumental variables to correct it. An instrumental variable (IV) is highly correlated with the regressor (which is assumed to be endogenous), but is not correlated with the error term (Wooldridge, 2007). Two general IV estimation techniques were developed to correct the endogeneity bias: two-stage least squares (2SLS) and the generalized method of moments (GMM) techniques. In the 2SLS technique at the first stage, new endogenous variables (so-called, instruments) are created to substitute the original ones and then, in the second stage, the regression is computed by OLS, but using the newly created variables, which are not correlated with the error term (i.e. are exogenous). In GMM estimation, the information contained in the population moment restrictions is used to define instruments (Hall, 2005). In addition to the two general IV methods, Hausman and Taylor (1981) developed, and Amemiya and MaCurdy (1986) advanced, an IV estimator, applicable to panel data only, based on the RE model. Namely, in RE model, regressors are assumed to be uncorrelated with the individual-specific error; the Hausman-Taylor estimator allows some of the regressors to be correlated with the individual-country effect, but not with the idiosyncratic error. This is still a source of endogeneity bias and requires an IV correction. Still, 2SLS and GMM estimates, on the one hand, and Hausman-Taylor, on the other, are not directly comparable, because they correct endogeneity arising from different sources (Greene, 2003). Though, Hausman-Taylor might give interesting insights in our case, because of the aspect mentioned above: only incomes and real exchange rate might be thought of being correlated with the unobserved country-specific effect, and Hausman-Taylor affords for this. Hence, in

what follows, five estimators are presented: FE, RE, Hausman-Taylor, IV-RE, IV-FE and GMM. We later explain our preference.

7. Results

Results are given in Table 1. Time effects are not presented due to space, but are available on request. In the IV estimates, lags of the instrumented variable(s), lags of the foreign income variable and of the domestic price level are used as instruments. Throughout all specifications, available diagnostics are fine.

Table 1 – Basic results

Dependent variable <i>Log of bilateral trade</i>	FE	RE	Hausman-Taylor	IV-2SLS RE	IV-2SLS FE robust	GMM FE robust	IV-2SLS FE robust (LINDER)	IV-2SLS FE robust (CEFTA)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Log of Domestic GDP per capita	0.977***	1.327***	1.012***	1.312***	0.890***	0.523**	0.673**	0.954***
Log of Foreign GDP per capita	1.135***	0.718***	1.116***	0.793***	1.273***	1.547***	1.541***	1.374***
Log of Real bilateral exchange rate (increase=depreciation)	-0.119*	-0.023	-0.178***	-0.251***	-0.499**	-0.589***	-0.438***	-0.420***
Distance (in km)	-	-0.221***	-0.217**	-0.228***	-	-	-	-
Trade agreement	0.087	0.097	0.020	0.114	0.008	-0.029	0.045	0.050
Common border	-	1.441**	2.008*	1.729**	-	-	-	-
Common language	-	1.608***	2.166*	1.852**	-	-	-	-
Linder effect (GDP_f/GDP_d)	-	-	-	-	-	-	-0.010***	-
Participation in CEFTA 2007	-	-	-	-	-	-	-	-0.060
Constant	-12.531***	-11.329***	-11.929***	-10.727***	-	-	-	-
F-statistics	121.54***	698.76***	147.52***	185.04***	31.70***	34.96***	28.38***	29.07***
H0: All regressors are insignificant								
Hansen test (p-value)	-	-	-	0.1140	0.17014	0.2179	0.1114	0.1773
H0: Instruments are valid								
Hausman test (p-value)		0.0295	-		0.0000	-	-	-
H0: RE estimator preferred								
Under-identification test (p-value)	-	-	-	-	0.000	0.000	0.000	0.000
H0: Model is under-identified								

Note: *, ** and *** signify significance at the 10, 5 and 1%, respectively.

The comparison between FE and RE is made in columns (1) and (2). As argued earlier, we have more intuitive grounds to run RE regression, although magnitudes are apparently similar. Though, in the FE regression, the first differencing wipes out all dummies that have a value of one over the entire time period. From econometric viewpoint, the Hausman test suggests using the FE estimator. However, the ‘middle’ solution, the Hausman-Taylor (column 3) estimator also gives plausible estimates and closer to the FE coefficients.

Considering endogeneity in the regressions (columns 4 to 6), we again do not observe considerable differences. The Hausman test (IV-FE versus IV-RE model; column 4 versus column 5) further favours the FE specification. However, these columns are interesting from another point of view. RE estimates are not robust to heteroskedasticity and autocorrelation, because the option is not developed under the respective command. On the other hand, instrumental variables FE estimators (2SLS and GMM) have the ‘robust’ facility. Though, columns (5) and (6) suggest that heteroskedasticity and autocorrelation is not of a considerable concern in our model, given that diagnostics remain stable, but estimates are slightly different. Namely, when heteroskedasticity and autocorrelation are accounted for, the coefficient on the foreign income per capita outweighs the one on the domestic income. Given this discussion, our preferred estimator is IV-FE robust – column (5).

Results suggest that Macedonian GDP per capita (supply in the model) plays significant role in explaining bilateral trade. An increase of domestic per capita GDP by 1% leads, on average, to an increase of bilateral trade by about 0.9%. However, note that a large share approximating over 35% of total economy is believed to be a "grey economy" (Schneider, 2007). Although a grey economy may be difficult to measure, its existence may introduce a bias into our estimate and hence this parameter should be interpreted with caution. Foreign income (demand in the model) is also highly significant, and predicts an increase of bilateral trade by, on average, 1.3% when the income of the foreign country increases by 1%. This result can be reconciled with the surge of economic activity in 2008-9, when the drop of Macedonian foreign trade due to contracted foreign demand was the main channel through which global economic crisis translated into the domestic economy.

Real exchange rate is significant and suggests that a depreciation of the real bilateral rate by 1% will reduce bilateral trade by half percent. It is

likely that the real depreciation has a larger impact on reducing import than on supporting export of Macedonia, hence resulting in overall reduction of the bilateral trade. This can be explained by the heavy import-dependence of the Macedonian economy and suggests that any attempt to stimulate export by depreciated currency might result in worse effect.

Surprisingly, the trade agreement variable is insignificant in all specifications. It suggests that any FTA that Macedonia has with a foreign country, including the CEFTA-2006 and the SAA, has not exerted any influence on the bilateral trade. This can be justified by the considerable significance of the foreign demand, suggesting that the bilateral trade between the countries is driven by the supply and demand and not by the existence of trade agreements. Alternatively, these FTAs might not have exerted any influence on trade because they have not managed to mitigate or eliminate the non-tariff barriers on trade. This point is returned to.

The remaining variables are wiped out from the FE regression. However, for intuition, their coefficients can be discussed from the RE regression, which is not completely discarded. In column (4), distance is expectedly negative, suggesting that the larger the distance, the lower the bilateral trade. If countries share same border and speak similar language, then trade is higher by, on average, 1.7 and 1.9 times, respectively, than compared to other countries that do not belong to these categories. This can be reconciled with the fact that Serbia and Kosovo from CEFTA-2006 are among the top five trading partners of Macedonia (shared border and similar language), while Greece from the EU is the third partner (shared border).

In column (7) the Linder effect is added. We observe that all remaining coefficients remain along the above magnitudes, which is a kind of robustness check of the results. The Linder coefficient itself is highly significant and has plausible magnitude. It suggests that if a country has double GDP per capita than Macedonia has (meaning higher by 100%), then bilateral trade will be on average smaller by 1%.

To analyse the potential gains from the CEFTA-2006, column (8) of Table 1 is drafted. For this purpose, the FTA variable is altered. Now, this variable has a value of 1 if Macedonia has a FTA with the respective country, other than the CEFTA-2006 agreement. Accordingly, a new variable is created, CEFTA, which takes a value of 1 if the respective country is a member of CEFTA-2006. Similarly to the all FTAs, the

CEFTA-2006 agreement is found not to have exerted any role on Macedonian foreign trade. There are a few plausible explanations for this: i) many countries in CEFTA-2006 have already had some business culture of mutual cooperation, dating back to former Yugoslavia, so that the whole effect of CEFTA-2006, if any, has already been utilised before; ii) CEFTA-2006 might not have significant implication for Macedonian trade, given that member-countries are more oriented to trade with the EU than among themselves; and iii) though CEFTA-2006 eliminated tariffs and quotas, it has led to increased significance of nontariff barriers, such as technical, sanitary and phyto-sanitary measures (Handziski *et al.* 2010). This discussion is returned to. In addition, as argued in section 3, the finding that CEFTA-2006 did not affect Macedonian trade to signatory countries might be a result of likely endogeneity, which is not pursued here, but remains an interesting insight for further research. Column (8) serves also as a robustness check for the other results.

In Table 2 we perform similar analysis, with the countries which are EU members only. Hence, the period of investigation remains the same, but the sample is halved. Note that we drop the variables related to common border and language, since only Bulgaria from the EU has those characteristics and, hence, this is neglected. We get largely similar results, with some notable differences, though. FE is further preferred in the ordinary estimation. Hence, conclusions are based on both columns (5) and (6). Domestic income is significant with larger magnitude than compared with the entire sample. This suggests that domestic supply on the EU market and domestic growth is very important in driving bilateral trade with the EU. If we add to this the argument that a considerable share of the economy is informal, then the effect of the domestic income on bilateral trade with the EU can be assumed to be even larger. Interestingly, though unexpectedly, EU income has smaller magnitude than the foreign income in general, in Table 1. This suggests that although the EU economy significantly affects Macedonian foreign-trade performance, bilateral trade is more determined by the supply than demand. This is, though, consistent with the observation that Macedonia's growth is fed by the imports of intermediate inputs, while export is pulled by the foreign demand, but the first effect is stronger. *Inter alia*, the implication is that Macedonian exporters need to improve export quality, invest in export promotion and so on, in order to supply more competitive product on the EU market. In addition, there might be a role for the policymakers in supporting export promotion, innovation and

diversification of domestic production, policies that are indeed currently implemented. On the other side, import is a strong determinant of domestic growth, but the import substitution with domestic sources of growth might appear as a necessity, if the trade deficit struggles for finances. Relative prices do not matter here, likely because of the anchoring of the denar to the euro. The SAA is found insignificant suggesting that demand and supply drive trade between Macedonia and the EU countries and not the provisions within the SAA.

Table 2 – Results for the EU

Dependent variable <i>Log of bilateral trade</i>	FE	RE	Hausman- Taylor	IV-2SLS RE	IV-2SLS FE robust	GMM FE robust
	(1)	(2)	(3)	(4)	(5)	(6)
Log of Domestic GDP per capita	1.029***	1.547***	1.107***	2.312***	2.089***	2.202***
Log of Foreign GDP per capita	1.192***	0.677***	1.104***	0.142**	0.455**	0.429**
Log of Real bilateral exchange rate (increase=depreciation)	-0.010	0.076*	0.009	-0.095	-0.112	-0.102
Distance (in km)	-	0.000***	0.000**	-0.581**	-	-
Trade agreement	-0.008	0.023	0.002	0.053	-0.004	-0.007
Constant	-13.824***	-11.683***	-11.687***	-	-	-
				11.595***		
F-statistics	319.95***	1043.21***	1163.57***	261.32***	31.67***	106.35***
H0: All regressors are insignificant						
Hansen test (p-value)	-	-	-	0.1132	0.2198	0.2198
H0: Instruments are valid						
Hausman test (p-value)		0.0003	-		0.0000	-
H0: RE estimator preferred						
Under-identification test (p-value)	-	-	-	-	0.000	0.000
H0: Model is under-identified						

Note: *, ** and *** signify significance at the 10, 5 and 1%, respectively.

Consequently, results suggest that Macedonian foreign trade is highly dependent on both domestic supply and foreign demand. Real depreciation of the currency shrinks trade, but is insignificant for the trade with the EU. Expectedly, the closeness of the trading partner, its economic similarity, the common language and border increase Macedonian trade. FTAs are found not to affect Macedonian trade nor are additional gains approximated from the CEFTA-2006 agreement. This suggests that trade relationships between Macedonia and its trading partners are principally governed by the supply and the demand, while the imposition of frameworks that facilitate trade, like SAA and CEFTA-2006 are, has likely not affected the further trade proliferation.

Nevertheless, some argue that despite the good will to further promote the trade with the EU and the intraregional trade, countries like Macedonia further face non-tariff barriers to trade. Hence, alternative explanation of the insignificance of the FTA and CEFTA-2006 variables in the specifications above can be sought in this argument. Handjiski *et al.* (2010) provide some evidence that non-tariff barriers are significant constraint to CEFTA-2006 trade and suggest that achieving complete trade liberalization, including the elimination of the non-tariff barriers, should be one of the first authorities' priorities.

Several points are worth mentioning in regard to the reduction and elimination of the non-tariff barriers. First, as all SEE countries aim to join the EU, the easiest way to harmonize technical, sanitary and phytosanitary standards is by converging to EU rules in these areas. Countries should closely cooperate and refrain from the misuse of those standards, as well as to refrain from applying regulations in a non-discriminatory manner. Secondly, the SEE countries lag behind the EU countries, including New Member States, in the area of time and costs to export and import, as measured by the trading across borders indicator of the Doing Business (Sanfey and Zeh, 2010). At the same time, logistics performance is weak. Government commitment is hence needed to make procedures for export and import more efficient and devote more resources for infrastructure investment, mainly roads and border points. Thirdly, CEFTA-2006 trade benefits could be reaped within the rules-of-origin provision and the possibility to apply wider diagonal cumulation of origin. Fourthly, trade in services could be greatly enhanced by moving forward on some of the CEFTA-2006 areas, such as public procurement, intellectual property rights, competition and state aid rules, and so forth.

8. Conclusion

The objective of this paper is to give a comprehensive view over Macedonian trade and potential economic gains for Macedonia from the further EU integration. The standard Gravity model is used to measure the determinants of the bilateral trade of Macedonia and the trading partners in a panel framework. Results suggest that Macedonian GDP per capita plays significant role in explaining bilateral trade. An increase of domestic per capita GDP by 1% leads, on average, to an increase of bilateral trade by about 0.9%. However, a large share of the Macedonian economy is believed to be a "grey economy" and hence these estimates should be approached with caution. Foreign income is also highly significant, and predicts an increase of bilateral trade by, on average, 1.3% when the income of the foreign country increases by 1%. When Macedonian trade with EU is investigated only, then domestic income has larger magnitude than compared to the entire sample. This suggests that domestic supply on the EU market and domestic growth is very important in driving bilateral trade with the EU. Real exchange rate is significant only when total trade is observed and suggests that a depreciation of the real bilateral rate by 1% will reduce bilateral trade by half percent. The closeness of the trading partner, its economic similarity, the common language and border, increase Macedonian trade. As an important finding from this study, no additional gains have been approximated from FTAs and from CEFTA-2006, in particular. Potential explanation of this can be the still existent non-tariff barriers across the SEE countries, in terms of the technical, sanitary and phyto-sanitary barriers to trade, the time and costs to export and import, improvement of infrastructure related to trade and so on.

References

- Amemiya, Takeshi, and Thomas MaCurdy.** 1986. "Instrumental Variable Estimation of an Error-Components Model." *Econometrica*, 54:869-881.
- Anderson, James E., and Eric van Wincoop.** 2003. "Gravity with Gravitas: A Solution to the Border Puzzle." *American Economic Review*, 93(1):170-192.
- Bahmani-Oskooee, Mohsen, and Janardhanan Alse.** 1993. "Export Growth and Economic Growth: An Application of Cointegration and Error-Correction Modeling." *Journal of Developing Areas*, 27(4):535-542.
- Baier, Scott L. and Jeffrey H. Bergstrand.** 2007. "Do Free Trade Agreements Actually Increase Members' International Trade?" *Journal of International Economics*, 71(1):72-95.

- Buffie, Edward F.** 1992. "On the Condition for Export-Led Growth." *Canadian Journal of Economics*, 25:211-225.
- Bussiere, Mathieu, Jarko Fidrmuc, and Bernd Schnatz.** 2005. "Trade Integration of Central and Eastern European Countries. Lessons from a Gravity Model." ECB Working Paper Series, 545.
- Christie, Edward.** 2002. "Potential trade in Southeast Europe: a gravity model approach." Working Paper No. 21, The Vienna Institute for International Economic Studies, Vienna.
- Clark, Peter B., Natalia Tamirisa, Shang-Jin Wei.** 2004. "Exchange Rate Volatility and Trade Flows: Some New Evidence." IMF Occasional Paper, 235.
- Druzic, Ivo, Marija Peneva, and Tomislav Sekur.** 2009. "Dynamics and Composition of Trade Relations Between Croatia and CEFTA-2006 Countries." *Proceedings from the Third International Conference: Regional Cooperation and Economic Integration: Challenges and Opportunities, October, 15-17 2009, Faculty of Economics, Skopje.*
- Dutt, Swarna D. and Dipak Ghosh.** 1996. "The Export Growth – Economic Growth Nexus: A Causality Analysis." *The Journal of Developing Areas*, 30:167-182.
- Frankel, Jeffrey.** 2008. "The Estimated Effects of the Euro on Trade: Why are they below historical effects of monetary unions among smaller countries?" Harvard Kennedy School Research Working Paper Series, December, 2008.
- Giles, Judith A. and Cara L. Williams.** 1999. "Export-led Growth: A Survey of the Empirical Literature and Some Noncausality Results." *Econometrics Working Paper EWP9901.*
- Greene, William.** 2003. *Econometric Analysis*. 5th Ed., New Jersey: Prentice Hall.
- Hall, Alastair R.** 2005. *Generalized Method of Moments*. Oxford: Oxford University Press.
- Hallak, Juan Carlos, and Jagadeesh Sivadasan.** 2009. "Firms' Exporting Behaviour Under Quality Constraints." NBER Working Paper, w14928.
- Handjiski, Borko, Robert Lucas, Philip Martin, and Selen Sarisoy Guerin.** 2010. "Enhancing Regional Trade Integration in Southeast Europe." World Bank Working Paper Series No. 185, World Bank.
- Hausman, Jerry, and William Taylor.** 1981. "Panel Data and Unobservable Individual Effects." *Econometrica*, 49(6):1377-1398.
- Helpman, Elhanan, and Paul Krugman.** 1985. *Market Structure and Foreign Trade*. Cambridge: MIT Press.
- Jelisavac, Sanja, and Mina Zirojevic.** 2009. "CEFTA-2006 and Economic Crises -- Case of Serbia." *Proceedings from the Third International Conference: Regional Cooperation and Economic Integration: Challenges and Opportunities, October, 15-17 2009, Faculty of Economics, Skopje.*
- Kathuria, Sanjay.** 2008. *Western Balkan integration and the EU: an agenda for trade and growth*. World Bank Publications - Business & Economics.
- Kikerkova, Irena.** 2009. "CEFTA-2006 as Basis for Economic Reintegration of Western Balkan Countries." *Proceedings from the Third International Conference: Regional Cooperation and Economic Integration: Challenges and Opportunities, October, 15-17 2009, Faculty of Economics, Skopje.*
- Krizmanic, Marta.** 2007. "The New CEFTA with Special Reference to its Influence on Accession to the European Union and on the Republic of Croatia." *CYELP*, 3:559-579.

- Martinoz-Zarzoso, Inmaculada.** 2003. "Gravity Model: An application to trade between regional blocks." *Atlantic Economic Journal*, June, 2003.
- Pere, Engjell.** 2009. "Economic Trade Relations in Focus of Regional Integration of West Balkans Countries." *ICBS*, p.167-183.
- Pjerotic, Liljana.** 2008. "Trade Liberalization in the South East Europe – Effects and Controversial Issues." *Panoeconomicus*, 4:497-522.
- Pugh, Geoffrey. and David Tyrrall.** 2000. "Intra-European Trade, Exchange Rate Variability, and Monetary Cooperation in Europe: Some quantitative evidence for the single currency debate." *Conference The European Monetary Union and Beyond, Prague University, June 1999.*
- Rose, Andrew K.** 2000. "One Money, One Market: Estimating the effect of common currencies on trade." *Economic Policy*, 15(30):7-46.
- Sanfey, Peter, and Simone Zeh.** 2010. "Trade Potential and Long-Run Growth in SEE." In: Will Bartlett and Vassilis Monastiriotis (eds) "*South Eastern Europe after the Crises: a New dawn or back to business as usual?*" London: London School of Economics-Research on South Eastern Europe, p. 35-43.
- Sarafidis, Vasilis, Takashi Yamagata, and Donald Robertson.** 2009. "A Test of Cross Section Dependence for a Linear Dynamic Panel Model with Regressors." *Journal of Econometrics*, 148(2):149–161.
- Schneider, Frederich.** 2007. "Shadow Economies and Corruption All Over the World: New estimates for 145 countries." *Economics: The Open-Access, Open-Assessment E-Journal*, (1):2007-9.
- Wooldridge, Jeffrey M.** 2007. *Introductory Econometrics: A Modern Approach*. 3rd edition, London: The MIT Press.
- Xu, Zhenhui.** 1996. "On the Causality between Export Growth and GDP Growth: An Empirical Re-investigation." *Review of International Economics*, 4(2):172-184.