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Regional Integration, Trade and Development in the Balkans: A Dynamic Poisson Approach

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ABSTRACT:

South-South agreements have been hailed as an important tool of developmental export promotion for low- and middle-income countries. Their success record, however, is mixed. This paper investigates the trade-promoting effects of the Central European Free Trade Agreement (CEFTA-2006) – a regional trade agreement between eight emerging economies in the Balkan region. Applying a dynamic Poisson estimator to a comprehensive balanced panel dataset, we find little evidence to conclude that CEFTA had a trade-creating effect, although there is evidence to suggest that CEFTA modified the composition of regional trade, increasing the share of intra-industry trade. By contrast, we find that North-South agreements involving CEFTA members had a strong effect on exports, and suggest that their success had to do with institutional design characteristics. We also investigate the effects of the CEFTA agreement at the individual country level. Preliminary evidence suggests that the ability of CEFTA members to take advantage of trade liberalisation depends on the characteristics of the supply-side environment. The trade pattern of CEFTA countries increasingly resembles a ‘hub-and-spoke’ structure, with advanced industrial economies becoming increasingly important markets for low-value added exports from individual CEFTA countries. We conclude by calling for deeper regional (and regionally driven) integration, and more proactive policies aimed at export promotion and industrial upgrading.

KEYWORDS:

South-South Integration, CEFTA, FTAs, Trade Dynamics, Historical Legacies, Poisson

1. Introduction: South-South Integration and CEFTA

Since the early 1950s, several multilateral bodies – starting with the UN Regional Commissions – have vigorously promoted regional economic integration amongst developing countries. South-South trade agreements are thought to enable member states to ‘reap more easily the benefits of competition, specialization and [...] scale’ (UNCTAD, 1964: 25; UNIDO, 2009: 76-78). Typically, emerging-market manufactures, ‘including the more skill- and technology-intensive product categories, find markets more easily in countries in the same region than in international markets further away’ (UNCTAD, 2007: 114). Since the technology gap is smaller amongst countries at a similar level of per-capita income, South-South imports and Foreign Direct Investment (FDI) flows have been shown to generate higher positive externalities than the corresponding North-South flows (Amighini and Sanfilippo, 2014). Indeed, by

allowing firms to operate closer to the optimal level of output, South-South blocs can also act as a 'nurturing habitat' for infant industries seeking to penetrate extra-regional markets (UNCTAD, 1964: 25).

While the effects of regionalism on trade have been widely studied for some regional blocs (e.g. MERCOSUR), other South-South regional-bilateral free trade agreements (FTAs) have received much less attention. The aim of this paper is to investigate the implications of one such little-studied regional FTA: the Central European Free Trade Agreement (CEFTA), which brings together eight emerging economies in Eastern Europe and the Balkans: Moldova and Kosovo* (lower-middle income); Albania, Macedonia, Bosnia-Herzegovina, Serbia and Montenegro (upper-middle income); and, until its accession to the EU, Croatia (high-income).

In the empirical literature, the impact of FTAs on trade is, on balance, inconclusive (Lambert and McKoy, 2009; Lee et al., 2008). Similarly, the success of regional integration in emerging markets has varied widely, with the largest gains in intra-regional trade recorded within trade blocs in Asia (e.g. ASEAN) and the lowest in Africa (UNCTAD, 2007). Indeed, as much as 80% of South-South trade in 2010 was concentrated in Asia (Nel and Taylor, 2013: 1094). Variation in the ability of regional-bilateral FTAs to promote trade has been explained with reference to their institutional design features and the degree to which the norms they embody promote 'deep' integration (Baier et al., 2014; Kohl et al., 2016). Other perspectives have suggested that liberalisation alone may not be sufficient to promote trade; rather, more proactive industrial policies may be necessary if member countries are to upgrade their productive capabilities and take advantage of regional complementarities (UNCTAD, 2007). More generally, critics of South-South integration have pointed out that most tariff liberalisation in recent years has occurred between advanced industrial countries or along a North-South axis. To the extent that it has occurred, South-South trade liberalisation is often imperfect, not least due to the persistence of non-tariff barriers to trade (Nel and Taylor, 2013).

In the Western Balkan region, the early vision of developmental regionalism advanced by UNCTAD and the UN Regional Commissions has remained largely peripheral to the promotion of regional integration. By and large, CEFTA emerged under the stewardship of the EU and the International Financial Institutions, and was conceived from the start as an 'appendix' to the processes of post-conflict peace-building and 'Europeanisation' following the break-up of Yugoslavia. As noted by a critic, the aim of the agreement was more to function as a 'training ground' for regulatory convergence with the EU than to promote industrial upgrading and development (Biukovic, 2008).

Regional integration in the Western Balkans has proceeded in two steps. In 2001, a Memorandum of Understanding (MoU) was signed (tellingly, in Brussels), envisaging in the first instance the creation of a matrix of bilateral FTAs amongst individual Balkan countries. With a requirement that all export

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence.

restrictions be abolished and import duties eliminated on at least 90% of intra-regional trade and 90% of individual countries' tariff lines¹, the MoU paved the way for a substantial reduction in the trade barriers erected during the Yugoslav wars. Furthermore, the Balkan countries were required to initiate procedures to lift quantitative restrictions, abolish import licensing arrangements and work to reduce non-tariff barriers to trade².

In June 2006, all the bilateral FTAs were consolidated into a fully-fledged regional bloc. Instead of forming a new agreement, the parties adopted the expedient of extending the Central European Free Trade Agreement (CEFTA) – established in 1992 amongst the EU accession countries of east-central Europe – to the Balkan region. The new CEFTA-2006 agreement locked in the tariff regime set out in the MoU and, additionally, provided for the progressive abolition of customs duties on agricultural products. CEFTA also placed an explicit ban on quantitative restrictions and called on the signatories to comply with WTO provisions in several trade-related areas, including services, investment, government procurement and intellectual property³.

Did CEFTA accomplish its stated goal of increasing intra-regional trade? Evidence on the impact of CEFTA on trade is thin on the ground. Based on a descriptive analysis, Bartlett (2009) claims that the pre-CEFTA bilateral FTAs created in 2001 stimulated regional trade flows considerably. Yet, Bartlett (2008: 119-121) also argues that the post-socialist transition process was accompanied by intense de-industrialisation, with negative consequences on export capacity. There are additional reasons for doubting that CEFTA functioned as an engine of trade. At 8.93% in 2011, the share of intra-regional trade in total CEFTA members' trade remains stubbornly low, being less than one percentage point higher than it was at the time of CEFTA's establishment in 2006 (8.02%)⁴. This intra-regional trade share is substantially lower than the corresponding share for both North-North trade blocs such as the EU (65%) and NAFTA (51%) and for other South-South blocs such as ASEAN (25%) or MERCOSUR (16%) (Nel and Taylor, 2013: 1099). Indeed, in the CEFTA region trade patterns have tended to crystallise into a 'hub-and-spoke' structure, with individual CEFTA countries as peripheral 'spokes' converging to a 'hub' of core EU economies (Biukovic, 2008).

To test the effects of CEFTA econometrically, we estimate a gravity model for a (balanced) panel of trade flows between eight CEFTA reporters and their 54 largest trading partners during 2006-11 (see Appendix IV). The trading partners jointly account for 97.1% of total CEFTA members' trade. Conditioning on all the main trade policy mechanisms governing trade in the Balkans, we find little evidence to suggest that CEFTA increased the margins of trade. That said, there is some reason to conclude that CEFTA might

¹ Stability Pact Working Group on Trade Liberalization and Facilitation, *Memorandum of Understanding on Trade Liberalization and Facilitation*, art. 1.2.2

² MoU, art. 2.

³ See, in particular, art. 3, 10, 13, as well as chapter VI of the CEFTA agreement.

⁴ Authors' calculations based on data from UN Comtrade, 2016. This estimate is biased upwards since total trade does not include Kosovo*.

have increased the share of intra-industry trade in total regional trade. By contrast, we find that the trade agreements between the EU and individual Balkan countries did, on average, increase trade above the gravity ‘norm’. We explain these findings by arguing that from the point of view of institutional design CEFTA is a relatively ‘shallow’ trade agreement compared to the North-South agreements entered into by individual Western Balkan countries.

Additionally, we examine the impact of CEFTA at the individual country level and find that only two out of the eight member states actually benefitted from regional trade liberalization. To explain this intra-regional variation, we provide some preliminary evidence suggesting that capturing the benefits of liberalization depends critically on the ability of individual CEFTA countries to stimulate the domestic industrial economy. We conclude by calling for more (and more regionally driven) economic integration in the Balkans, highlighting the need for supply-side reforms and more proactive industrial policies.

2. Model and Empirical Specification

The ‘workhorse’ for the empirical analysis of trade is the gravity equation. Under the assumption that all countries have identical prices (i.e. free trade), the gravity law states that trade between countries i and j is directly proportional to the product of i ’s and j ’s economic mass, as measured by GDP. In the presence of ‘border effects’ (e.g. tariffs, transport and information costs), trade between i and j (X_{ij}) also depends negatively on total bilateral trade costs τ_{ij} . Thus, the theoretical equation may be written as:

$$X_{ij} = g_0 Y_i^\alpha Y_j^\beta \tau_{ij}^c \quad (1)$$

where Y is GDP, g_0 is a ‘gravitational constant’, τ_{ij} is the ratio of importer to exporter prices (usually proxied by geographical distance) and $c = (\eta - 1) < 0$, where η is the elasticity of substitution across trading partners. While the income elasticities α and β are often assumed to be equal to one, they should be left unrestricted if the traded-goods share of countries’ total expenditure (Y) is allowed to depend on country size (Anderson, 1979: 108-109). Since small developing economies are typically more trade-dependent than their larger and more prosperous counterparts, α and β may be significantly different from one.

The intuition behind the gravity equation is straightforward in a two-good/two-factor Heckscher-Ohlin (HO) framework (see Appendix I). The equation may also be derived from more sophisticated models of monopolistic competition that allow for product differentiation (Feenstra, 2007: 152-155) and, in fact, it may be used to test the relative merits of competing models. Thus, following other contributions (Philippidis et al., 2013), we explicitly test for whether bilateral trade increases between countries with different relative factor endowments, as the HO model implies, or whether trade is mostly of the intra-

industry kind, in line with monopolistic-competition models. To do so, we include the squared difference in trading partners' per-capita GDPs to proxy for relative factor ratios.

Recent contributions have shown that trade does not depend simply on the *absolute* magnitude τ_{ij} of bilateral trade costs (Anderson and Van Wincoop, 2003). Rather, trade between i and j depends on the bilateral barrier *relative* to the average barriers that i and j face with all their trading partners. These unobserved effects are called 'multilateral resistance terms' (MRTs) and their omission may cause bias in estimation. Empirically, MRTs are proxied using either country or country-pair dummies⁵ (Feenstra, 2004). Baldwin and Taglioni contend that country-pair dummies are superior to exporter and importer dummies in panel settings, and note that including pair dummies is tantamount to using the classic fixed-effects estimator (2007: 799, 802). We follow Baldwin and Taglioni in specifying a version of the Anderson-Van Wincoop (AVW) equation, which we estimate as an alternate to the traditional equation (1):

$$X_{ij} = G Y_i^\alpha Y_j^\beta \tau_{ij}^c \cdot e^{\theta_{ij} d_{ij}} \quad (2)$$

where G is a constant, d_{ij} is a set of country-pair dummies and θ_{ij} is a vector of parameters.

To operationalise trade costs more accurately, the empirical literature has typically augmented eq. (1) or (2) with other variables that may affect τ_{ij} independently of geographical distance, including trade policy variables. Trade agreements may reduce trade costs through several channels, e.g. reducing tariff charges and promoting regulatory convergence and thus lower information costs. In our specification, the trade policy variables take value 1 when both reporter and partner are parties to a joint trade policy instrument. The main variable of interest is $CEFTA_{ijt}$, but we also control for all the other principal policy instruments governing international trade in the Balkan region, which we review hereafter.

Many CEFTA countries have entered into bilateral trade agreements (FTA_{ijt}) with extra-regional partners, chiefly with Turkey. By 2011, all but two Balkan countries (Serbia and Kosovo*) had signed (at least the trade component of) a Stabilization and Association Agreement (SAA_{ijt}) with the EU, which provides for the reciprocal abolition of most tariff and non-tariff barriers. As developing economies, the Balkan countries also qualify for preferential market access under the WTO's General System of Preferences (GSP_{ijt}). Several advanced countries – notably the US, Japan and the EFTA trade bloc – have offered GSP preferences to at least some Balkan countries during 2006-11. Although technically not part of the GSP, the EU's Autonomous Trade Preferences (ATPs) are coded under this category⁶. Lastly, since

⁵ Other recent approaches suggest using three-dimensional fixed effects, including both country-pair *and* exporter-year and importer-year dummies (Baier et al., 2014). We do not consider this option.

⁶ The ATPs were superseded by the reciprocal SAAs as the latter came into force.

four out of eight CEFTA countries were not WTO members during 2006-11, we also condition on reporter's and partner's joint membership in the WTO_{ijt} .

Instead of increasing the *margins* of trade, trade agreements might simply *displace* trade from suppliers in nonmember countries to (potentially less efficient) member-country suppliers (trade diversion). Thus, an increase in intra-regional trade may be partially offset by a reduction in trade between members and *non*-members. Yet, our $CEFTA_{ijt}$ variable measures member-to-member trade *relative to* a reference category composed of member-to-*non*member country-pairs. Because all the reporters in our panel are CEFTA countries, our data cannot provide a reference category comprising *non*member-to-*non*member pairs. Therefore, we cannot measure trade diversion explicitly, nor can we compute the *net* trade-creating effect⁷. That said, our specification can still support valid inference about trade creation. The coefficients on the policy variables are simply the algebraic difference between trade-creation (TC) and trade-diversion (TD) effects: i.e. member-to-member trade measured *relative to* member-to-*non*member trade:

$$\varphi^{CEFTA} = TC - TD \quad (3)$$

Since by definition $TD \leq 0$, it follows that φ^{CEFTA} is at best equal to TC and at worst an over-estimate.

To better identify the effect of trade agreements, we control for a range of other factors that may affect trade costs independently of trade policy. Besides distance, geographical factors that affect trade costs include *contiguity_{ij}* (i.e. sharing a common border) and *landlock_i* (i.e. whether country i has access to the sea). Landlocked countries are usually assumed to have higher transportation costs. At the same time, we posit that a lack of a natural comparative advantage in coastal tourism and maritime transport may force landlocked countries to specialise in goods rather than service exports. Thus, the net effect of *landlock_i* is indeterminate *a priori*.

The importance of institutions for international trade is widely recognized in the literature. In this vein, we control for reporter's and partner's institutional quality by including an index of rule of law and (in an alternative specification) a corruption perceptions index. Although the evidence in the literature is mixed (e.g. Ro'i and Sénégas, 2012), we include a common currency dummy ($ComEuro_{ij}$)⁸ to control for the effects of monetary integration – the so-called 'Rose' effect. Lastly, one CEFTA member, Kosovo*, was under UN administration until its unilateral declaration of independence in 2008, and has since enjoyed limited international recognition. Thus, we control for any attenuating effect on trade due to Kosovo*'s lack of independent statehood and, after 2008, lack of recognition by some of its trading partners.

⁷ We could, in principle, measure trade diversion for WTO_{ijt} and FTA_{ijt} . Yet this is beyond the scope of this paper.

⁸ Montenegro and Kosovo* unilaterally adopted the euro in the run-up to their break-up with Serbia.

Other studies have stressed the importance of cultural factors in explaining trans-border trade (Meagher, 2010). These include sharing a common language/ethnicity ($ComLang_{ij}$) and a common religion ($\ln(ComRel)_{ij}$). $ComRel_{ij}$ is defined as the share of the partner country's population (j) that practices the reporter's (i) main religion. Diasporas have also been widely recognised as vehicles of export promotion (Felbermayr and Jung, 2009). Trans-national migrant networks should be expected to enhance trust, facilitate cross-border information flows and increase overseas demand for home-country products. To model this effect, we include a dummy that takes value one for the *two* countries hosting each CEFTA reporter's largest diaspora communities.

One of the innovations of this paper is to measure the impact of trade policies conditional on historical legacy effects (Eichengreen and Irwin, 1998). In the trade literature, legacies are typically modelled using common-coloniser dummies. In the Balkan context, we expect trade patterns to be affected by the legacies of Ottoman rule and common statehood under socialist Yugoslavia. An emerging literature has investigated the implications of the Habsburg-Ottoman divide for long-run economic and institutional development in the Balkans (Grosjean, 2011; Dimitrova-Grajzl, 2007). In our specification, $ottoman_i$ is an index from Grosjean (2011) that measures the number of years of Ottoman rule in reporter country i . The socialist legacy is measured with $YugoSoviet_{ij}$, a dummy for whether i and j were part of the same trans-national state entity in socialist times – e.g. Macedonia and Serbia under Yugoslavia; Moldova and Ukraine under the Soviet Union.

We deem this variable to be particularly important, for $CEFTA_{ij}$ may spuriously pick up the trade-promoting effect of trade networks that emerged and consolidated in Yugoslav and Soviet times, when the unions' constituent republics were not divided by international borders. The fact that a Yugoslav successor state (Slovenia) is no longer part of CEFTA, while a CEFTA member (Albania) was not part of Yugoslavia (and indeed, another CEFTA member, Moldova, was part of a distinct trans-national entity, i.e. the Soviet Union), rules out perfect multicollinearity between $CEFTA_{ij}$ and $YugoSoviet_{ij}$ ⁹.

A recent line of research has argued that trade is characterised by persistence effects. Omission of persistence effects is likely to bias the point estimates, potentially exaggerating the impact of trade policy instruments (Eichengreen and Irwin, 1998). International trade relations are subject to sunk costs – e.g. the cost of identifying consumer preferences in the export market, the cost of establishing trust and writing contracts with foreign buyers, etc. – and sunk costs imply persistence. Indeed, sunk costs may be particularly consequential in the context of South-South trade, where information deficits and trust problems are particularly binding. Thus, following Cameron and Trivedi (2013: 376), we specify a *dynamic* panel model that includes the first lag of X_{ij} (in levels) as a covariate.

⁹ The correlation coefficient is only 0.51.

Lastly, we follow Baldwin and Taglioni (2007: 790) in augmenting our regression equation with year dummies. Year fixed effects account for global trends in inflation rates, as well as any other economic shock affecting all country-pairs equally at a given time (e.g. the 2008 global financial and economic crisis). A detailed definition of all the variables and their sources is provided in Appendix V.

3. Estimation Strategy

Typically, gravity equations such as (1) and (2) are estimated by OLS in log-linear form. A slew of recent contributions, however, have shown that the log-linear transformation leads to inconsistent estimates (Manning and Mullahy, 2001; Silverstovs and Schumacher, 2009). In particular, OLS estimates of the role played by FTAs may be particularly susceptible to upward bias (Santos Silva and Tenreyro, 2006: 651). These contributions suggest that the gravity equation should be estimated directly in multiplicative form. Santos Silva and Tenreyro (hereafter, SST) propose a Pseudo-Maximum Likelihood estimator which, by fortunate coincidence, is algebraically equivalent to the Poisson (PPML) estimator typically used for count data. The PPML estimates the parameters of the following non-linear equation:

$$X_{ijt} = \exp[\rho X_{ij(t-1)} + \alpha \ln Y_{it} + \beta \ln Y_{jt} + c \ln \tau_{ijt} + G_0] \times \varepsilon_{ijt} \quad (4)$$

All it takes for the PPML to be optimal is that the conditional variance of the dependent variable should be proportional (but not necessarily equal) to the conditional mean. Since, in practice, it may not be the case that $V[X_{ij}|\vec{z}_{ij}] \propto E[X_{ij}|\vec{z}_{ij}]$, where \vec{z}_{ij} represents the regressors, SST recommend using robust standard errors to correct for heteroskedasticity. According to them, the ‘PPML has all the characteristics needed to be the workhorse for the estimation of constant-elasticity models such as the gravity equation’¹⁰.

The CEFTA countries are fairly heterogeneous in terms of level of development, and their export profiles display low degrees of dispersion across trade partners. Thus, we expect the group-specific individual effect to be non-constant. This implies that the pooled estimator may be inconsistent. While most authors address this problem by resorting to fixed effects estimation, an emerging literature has employed random effects models to deal with individual heterogeneity (Egger, 2002; Carrere, 2006). In particular, we follow Gashi and Pugh (2015) and Gashi et al. (2016) in specifying a random effects (RE) Poisson model à la Wooldridge (2005: 50-51). In RE models, individual heterogeneity is assumed to be randomly distributed. Estimating a *dynamic* RE model, however, poses additional econometric challenges.

¹⁰ See the ‘Log of Gravity’ page (<http://personal.lse.ac.uk/tenreyro/LGW.html>). The PPML estimators also has additional advantages. For one thing, it can handle zero-values, which in our dataset account for some 12% of observations on the export side, and over 2% on the import side. For another, it produces predictions whose sum equals the actual total sum of trade flows (Arvis and Shepherd, 2013). OLS does not have this desirable property.

For starters, ‘in short panels initial conditions play an important role in the evolution of the outcome’ and should be controlled for explicitly (Cameron and Trivedi, 2013: 375). The initial condition variable is likely to be correlated with the unobserved individual effect, violating the basic assumption of the RE model¹¹. In response, Wooldridge (2005) recommends controlling for the *group average of all time-varying continuous exogenous variables* (e.g. reporter’s and partner’s GDP, rule of law, etc.). This ‘trick’ displaces the component of the individual effect that is potentially correlated with the regressors from the composite error term into the estimated part of the model.

Critics might retort that using RE in a *non-linear* context makes the assumptions about the randomness and distribution of the individual effect all the more binding¹². To check the extent to which our results are robust to distributional assumptions, we estimate our model assuming either gamma- or normally distributed RE. Although we cannot guarantee that using Wooldridge’s ‘trick’ completely rules out potential correlation between the regressors and the unobserved individual effect subsumed in the error term, the inclusion of a wide range of controls (e.g. institutions, geography) should allay concerns about endogeneity from omitted variable bias. Lastly, we do not expect our variables of interest to be affected by simultaneity problems. Although trade agreements are sometimes endogenous to trade flows, CEFTA was largely an EU-promoted project and, as such, may be considered exogenous. The same is true of the other North-South agreements, especially the SAAs.

For all its merits, the RE model has the important theoretical disadvantage of being ill-suited to handling MRTs. For one thing, multilateral resistance is not ‘truly’ random, although it may very well be uncorrelated with the observed regressors in the gravity equation¹³. For another, the AVW model is ‘agnostic’ about the distribution of MRTs, whereas the RE estimator effectively imposes a constraint on their distribution (Shepherd, 2013: 39). Thus, we also elect to estimate a version of the AVW equation (2) using FE, which allows for unconstrained variation in multilateral resistance¹⁴. Of course, fixed effects estimation comes at the great cost of eliminating between-group variation and losing degrees of freedom. Worse still, we need to eliminate the lagged dependent variable in order to recover some pre-2007 observations and generate within-group variation on $CEFTA_{ijt}$. Even so, within-group variation on $CEFTA_{ijt}$ is fairly low and solely driven by Kosovo* (the only Balkan country that in 2006 had *not* yet signed a pre-CEFTA FTA with *all* other Balkan partners) and by Romania and Bulgaria, who discontinued their pre-CEFTA FTAs with other Balkan countries in January 2007 in order to join the EU.

Evidently, the choice of estimation technique embodies a trade-off. Instead of picking one side,

¹¹ Furthermore, the individual effect is part of the composed error term and is thus correlated with the lagged dependent variable by construction (Gashi and Pugh, 2015: 76).

¹² Personal communication with Joao Santos Silva, August 2016.

¹³ In which case, it could be ‘modelled’ as random (Greene, 2012: 371).

¹⁴ Whenever we encountered computational problems with the FE models, we tried the alternative optimisation methods suggested by SST (2011).

we remain ‘ecumenical’ and check the robustness of our results across different econometric specifications.

4. Main Results

The results are presented in Tables 1 and 2. In both tables, models (1)-(4) are random effects, while models (5) and (6) are fixed effects. Model (4) assumes that the RE is normally distributed, while models (1)-(3) assume that the RE is distributed as gamma. In all the RE models, a likelihood-ratio test¹⁵ (not shown) rejects the null that the variance of the random effect is zero, confirming the inconsistency of the pooled estimator. For the *export* equation, the RE and FE results are qualitatively similar, suggesting that the RE estimates are likely to be consistent¹⁶. Furthermore, in RE models the RESET test (SST, 2006: 651) cannot reject the null that the conditional expectation is correctly specified, while the null is rejected in all FE models. For the *import* equation, by contrast, we observe several discrepancies between the RE and FE estimates, especially when it comes to the trade policy variables. The group-specific propensity to import may not be ‘truly’ random, and the RE estimates may be inconsistent. Moreover, the RESET test statistic almost always rejects the null that the RE models are well-specified. Thus, for the import equation, we decide to interpret the FE models.

For the RE export model (column (4))¹⁷, we also run diagnostics to test the assumptions implied by the PPML estimator¹⁸ (SST, 2006: 646, see Appendix III). SST’s Park-type test rejects the null (p -value = 0.000) that the model may be consistently estimated in the log-linear form, providing support for the use of PPML. At the same time, a Gauss-Newton regression indicates that the assumption of PPML ($[X_{ij}|\vec{z}_{ij}] \propto E[X_{ij}|\vec{z}_{ij}]$) cannot be rejected at the 5% level (p -value = 0.071), which suggests that the PPML estimates are not only consistent but also efficient.

[Tables 1, 2]

In the export equation, all the gravity variables enter with the ‘correct’ sign and significance level. The income elasticity of supply (α , the coefficient on reporter’s GDP) is considerably smaller than 1, suggesting that export supply capacity in the Balkan region is, on average low: a 10% increase in national income leads to an increase in exports between 5.5-6.1%. In the import equation, by contrast, the demand elasticity (α) is equal to 1. This points to a great thirst for manufactured imports, especially consumables,

¹⁵ Equivalent to Breusch and Pagan’s LM test for random effects in a linear context.

¹⁶ Due to a breakdown in its assumption, the Hausman test statistic could not be computed.

¹⁷ Since STATA 14’s >predict< command does not integrate over individual effects after >xtpoisson, re<, the SST tests could not be performed after the RE (gamma) models.

¹⁸ Not shown in the tables.

across the CEFTA region. Transportation costs, as measured by distance, deter exports much more than imports. Moreover, imports do not seem to depend critically on the trading partner's economic mass.

Most of the other variables enter with the expected sign. The only exceptions are the (insignificant or sometimes even negative) common currency effects, for which the evidence in the literature is mixed anyway (Ro'i and Sénégas, 2012); the rule of law and corruption indices, which enter insignificant in most specifications¹⁹; and $landlock_{ij}$, which is positive and highly significant in the export equation, but insignificant in the import equation. A possible explanation for this latter result is that, in the CEFTA region the reduction in *goods* exports due to having a comparative advantage in coastal *services* greatly exceeds the export loss that landlocked countries experience as a result of higher transportation costs. Consistent with the results, this argument implies that on balance landlocked reporters should export more than coastal reporters, holding everything else constant.

Our results confirm the importance of historical legacy effects as predictors of trade. The coefficient on the lagged dependent variable is economically small but always significant. The Ottoman Empire's mercantile tradition and dominance over East-West trade routes seems to have bestowed superior trade dynamism upon the Balkan countries that were under its rule for a longer period of time (Hozic, 2008). Crucially, the legacy effect of common socialist statehood ($YugoSoviet_{ij}$) on trade is always large and significant. If two countries were part of the same supra-national entity during 1945-1990, their mutual export trade during 2006-11 was, on average, four times higher than that of countries without a legacy of common statehood ($100 \cdot (e^{1.57} - 1) = 380\%$). Evidently, an important share of total trade growth in the post-war period was caused by the re-activation of inter-ethnic trade/business networks that had previously existed under a unified Yugoslavia.

Coming now to our main variables of interest – the trade policy variables – we notice that $CEFTA_{ijt}$ is (almost) never significant in the export equation, while in the import equation it only enters significant in the FE (static) model. On the export side, it appears that the proposition that CEFTA is trade-enhancing depends crucially on discounting the Yugoslav legacy effect. As shown in column (3), $CEFTA_{ijt}$ enters positive and mildly significant only when $YugoSoviet_{ij}$ is omitted. If φ^{CEFTA} is statistically indistinguishable from zero, it follows from eq. (3) that $TC = TD$, with $TD \leq 0$. Thus, there are two possible interpretations. In the absence of trade diversion ($TD = 0$), $\varphi^{CEFTA} = 0$ implies that CEFTA did not increase the margins of intra-regional trade (i.e. $TC = 0$). In the presence of trade diversion ($TD < 0$), eq. (3) implies a negative value of TC : trade diversion into the regional bloc is accompanied by intra-regional trade 'destruction' of equal magnitude. As mentioned earlier, our dataset does not allow us to distinguish between these two, equally undesirable, scenarios.

¹⁹ In the export equation, the reporters' 'rule of law' index is negative and (almost always) significant at the 10% level. This implies that CEFTA countries with better rule of law export less than those with worse rule of law. This result is counter-intuitive and we do not have a ready explanation for it.

On the import side, the FE models in Table 2 (column (6)) indicate that *imports* did increase over time for intra-CEFTA country-pairs. Conceptually, however, the FE estimator does not provide any clue as to the structure of cross-country trade *patterns*. FE can only answer a ‘within-question’, and as such it provides no evidence to the effect that intra-CEFTA trade increased *faster* (holding everything else constant) *than* trade with non-CEFTA partners (Subramanian and Wei, 2007: 166). On the contrary, during 2006-11 the average country-level growth rate of *extra-regional* imports (46.1%) was 24 percentage points *higher* than the average growth rate of intra-CEFTA imports (22.2%).

As MFN tariff rates declined rapidly across the region since year 2000, the tariff cost differential between intra- and extra-regional imports accordingly narrowed, prompting consumers to switch to higher-quality goods from the EU and Turkey, or to lower-cost consumer manufactures from China. While intra-regional imports did grow above the gravity ‘norm’ (as signified by a significant coefficient on $CEFTA_{ijt}$), trade liberalisation coupled with the lack of a common external tariff (CEFTA is not a customs union) allowed Western Balkan countries to rapidly grow their imports of extra-regional goods, including from those countries that do not enjoy preferential access to Balkan markets.

On the export side, the only trade policy instruments that promoted CEFTA countries’ exports are the SAAs and, to a lesser extent, the advanced countries’ GSP preferences. Interestingly, both these trade policy instruments facilitate trade liberalisation along the North-South axis. Based on the estimates from model (1) (Table 1), SAAs and GSPs have increased export volumes to advanced-country partners by 41% and 30%, respectively. Although reciprocal, the obligation to remove tariff barriers is ‘differentiated’ under the SAAs, with EU countries removing all tariffs immediately, and the Balkan partner countries following suit on a gradual schedule stretching over up to seven years. This might explain why the SAAs did not increase *imports* above the gravity ‘norm’. The lesser role of GSPs relative to the SAAs is consistent with previous findings in the literature. Shadlen (2008), for instance, argues that, being unilateral, GSP concessions offer a relatively unstable regime of preferential market access compared to FTAs, which are reciprocal and treaty-based. In contrast to these North-South agreements (the SAAs and the GSPs), the FTAs with other (mostly) developing or transition economies (chiefly, Turkey) have had not statistically significant trade-enhancing effects. Lastly, joint WTO membership does not seem to have a pro-trade effect. The negative coefficient obtained in the FE models (both in the export and import equations) is consistent with previous findings on the impact of WTO membership in developing countries (Subramanian and Wei, 2007).

[Table 3]

What explains variation in the trade effects of different agreements? Recent contributions have suggested that agreements embodying deeper integration yield stronger trade-creating effects (Baier et

al., 2014). CEFTA's low degree of comprehensiveness relative to the SAAs may explain its insignificance as a driver of trade. The comprehensiveness of a trade agreement refers to the range, depth and enforceability of its provisions. Conspicuously, the CEFTA agreement lacks enforceable provisions on technical barriers to trade, border procedures and dispute settlement – all of which are covered in most active SAAs (Kohl et al., 2016). Unlike other more successful South-South agreements (e.g. MERCOSUR), CEFTA is not a customs union. Indeed, anecdotal evidence suggests that non-tariff barriers may be an important inhibitor of trade creation amongst CEFTA members. Examples of trade disputes fuelled by the use (or abuse) of technical standards include the 2012 'cement war' between Kosovo* and Albania, in which Kosovo* imposed an embargo on cement imports from its CEFTA neighbour, and Kosovo*'s retaliation against Macedonia in 2013 following the latter's decision to limit wheat and flour imports from Kosovo*.

Table 3 reports Kohl et al.'s indices of FTA comprehensiveness for (some of) the trade agreements modelled by our trade policy variables. The table distinguishes between enforceable and non-enforceable provisions, as well as between provisions that are grounded in WTO rules and those that are not. The EU is included for reference. By all measures, both CEFTA and the other (mostly) South-South agreements coded by FTA_{ijt} are *less* comprehensive than the North-South SAAs. Indeed, the WTO agreement, which is usually considered less comprehensive than regional-bilateral agreements (Shadlen, 2005), attracts the lowest coefficient in our models. Thus, part of the reason for CEFTA's failure to catalyse intra-regional trade may have to do with the relatively low degree of institutional and normative integration it promotes.

5. Intra-industry Trade

An important rationale behind regionalism is the belief that regional blocs enable member countries to upgrade and diversify their industrial structures and reduce reliance on labour-/resource-intensive exports to advanced countries. In this vein, it is often claimed that South-South trade agreements promote intra-industry trade (UNCTAD, 2007: 111). Did CEFTA? In the models reported in Tables 1 and 2, $\text{Log}(\Delta \text{GDP per capita})$ measures the trade effects of similarity in factor endowments between trading partners. The coefficient is always insignificant, implying that neither specialisation à la Heckscher-Ohlin, nor intra-industry trade are dominant. We test whether this net zero effect is a combination of two opposite effects: intra-industry trade within CEFTA and extra-regional trade conforming to comparative advantage.

[Table 4]

To do so, we interact $\text{Log}(\Delta\text{GDP per capita})$ with $CEFTA_{ijt}$. Table 4 only reports the estimated parameters on the trade policy variables and the interaction term. All the other coefficients are very similar to those obtained in Tables 1 and 2 (model 4) and are not reported to save space. The interaction term is negative and significant in the import equation. This implies that, for *intra-regional* import flows the constant elasticity of $\text{Log}(\Delta\text{GDP per capita})$ is significantly *lower than* the constant elasticity for extra-regional import flows. Indeed, using STATA's `>margins<` command²⁰, we find that the constant elasticity of $\text{Log}(\Delta\text{GDP per capita})$ is negative and significantly different from zero when $CEFTA_{ijt} = 1$, while it is statistically indistinguishable from zero when $CEFTA_{ijt} = 0$. Within CEFTA, bilateral trade *decreases* the wider the difference in relative factor ratios between any two trading partners. This result is consistent with the proposition that CEFTA has increased the share of intra-industry trade in total (intra-regional) trade. Although it did not have an effect on the *magnitude* of intra-regional trade, there is some evidence that suggests that CEFTA might have affected its *composition*.

6. Country-Level Results and the Role of the Supply-Side Environment

The benefits of South-South integration may be unevenly distributed, with more advanced industrial economies in a regional bloc capturing most of the gains from increased intra-regional trade (Venables, 2003; UNCTAD, 2007; Moncarz and Vaillant, 2010). To investigate this proposition in the case of CEFTA, we re-estimate model (1) from Table 1 reporter-by-reporter and compare the coefficient on $CEFTA_{ijt}$ across different CEFTA members. To gain additional observations, we constrain the lagged dependent variable to be equal to zero whenever controlling for individual effects is sufficient to eliminate autocorrelation in the error term (Cameron and Trivedi, 2013: 367).

[Table 5]

The results are presented in Table 5, which reports the estimates of the trade policy parameters only. With the exception of Moldova, which is geographically removed from the Western Balkan region, the members that benefitted most from regional trade liberalisation (Albania and Macedonia) were not the most industrially advanced. Conditional on all other effects, the impact of CEFTA on the export levels of the region's most advanced economies (Croatia, Serbia) is zero. This result runs counter to theoretical expectations (Venables, 2003).

²⁰ The constant elasticity of $\text{Log}(\Delta\text{GDP per capita})$ can be obtained by differentiating the regression equation with respect to $\ln(\Delta\text{GDPpc})_{ijt}$: $\partial \ln X_{ijt} / \partial \ln(\Delta\text{GDPpc})_{ijt} = \theta + \varphi CEFTA_{ijt}$, where θ is the estimated parameter of $\text{Log}(\Delta\text{GDP per capita})$ and φ is the estimated coefficient of the interaction term. Because of the interaction term, the elasticity is a linear function of $CEFTA_{ijt}$.

Rather than on its level of development, we suggest that a country's ability to gain from regional liberalisation might depend on the supply-side environment. A vast literature has documented the importance of supply-side policies aimed at mobilising resources for export-led development (Wade, 1990; Chang, 2003; Palma, 2008). In the Balkan region, however, the post-socialist/post-conflict state has typically taken a 'hands-off' approach to export promotion, on the assumption that trade liberalisation would automatically lead to enhanced export capabilities (Uberti, 2014). At the same time (or perhaps as a result), domestic savings and investment rates in many Balkan economies have remained stubbornly low. Indeed, aid and remittance inflows, which typically fuel household and government consumption, are often a more important source of growth for many Balkan countries than export earnings (Duval and Wolff, 2016). An unpropitious supply-side environment across the region might contribute to explaining why CEFTA, on average, has not had a trade-enhancing effect. In addition, *variation* in the supply-side environment across individual CEFTA members may account for their differential ability to benefit from liberalisation.

A theoretical rationale for this argument is suggested by Figure A1. Trade liberalisation narrows the price wedge between exporter i and importer j , inducing a rise in the supply price in i . The extent to which a price rise causes an increase in export supply, however, depends crucially on the elasticity of the supply response (the slope of curve S_i). Unless there is plenty of excess capacity in the export-oriented sector, or resources may be easily shifted from other inward-looking sectors (e.g. the old state-owned sector), the supply curve may in reality be quite inelastic with respect to price. The supply curve, however, should be expected to become more elastic if i 's economy can easily mobilise *new* resources to satisfy increased excess demand in j . These resources are bound to come from either *domestic* savings, or *foreign* savings (FDI or foreign loans). Thus, the ability of an economy to mobilise productive resources for (export-oriented) investment is an important factor that *moderates* the impact of liberalisation on trade.

[Figures 1-3]

Testing this argument empirically would involve augmenting eq. (4) with a set of interaction terms between $CEFTA_{ijt}$ and a variable measuring (domestic and foreign) savings. However, the model with theory-consistent interactions is highly nonlinear, making estimation impossible (Appendix II). We thus limit ourselves to providing some preliminary descriptive evidence on the relation between supply-side conditions and intra-regional trade in CEFTA. Figures 2, 3 and 4 plot intra-regional trade volumes against three potential sources of finance for export-capacity accumulation: domestic savings, FDI and foreign loans. Intra-regional trade for country i at time t is measured as the logged ratio of i 's exports to CEFTA (X_{it} , $i \in CEFTA$) to the product of importer's/exporter's GDP. Dividing by $Y_{it} \cdot Y_{jt}$ provides a basic control for country size. The plots suggest qualitatively that the CEFTA countries that were able to benefit

from trade liberalisation and increase their volumes of intra-CEFTA trade (e.g. Albania) were those with higher savings rate. By contrast, FDI inflows and foreign loans do not contribute significantly to export-capacity accumulation, at least when it comes to intra-CEFTA trade. This is not surprising, as in the Western Balkans foreign loans and FDI have mostly financed investment in non-tradable sectors, chiefly banking, real estate and construction (IMF, 2015: 48).

The obvious implication is that attracting higher volumes of FDI or taking on more external debt might not lead to additional gains in intra-regional trade, at least if current trends in the sectoral distribution of lending and FDI remain unchanged. On the other hand, industrial policies aimed at mobilising domestic savings and promoting domestic capital and technology accumulation might bring more sizeable gains.

7. Conclusion

South-South trade agreements can be an important tool of export promotion and industrial upgrading for developing and transition countries. Specialisation in primary commodities and low-skill manufactured exports to advanced country markets can lock emerging economies onto a path of secular stagnation (UNCTAD, 2007; Palma, 2009). South-South agreements can provide a much-needed 'breathing space' for nascent manufacturing firms, promoting a shift to higher-value added exports and, accordingly, a higher share of intra-industry trade in total trade. This is consistent with our results in Table 4.

Whether South-South agreements increase *total* trade, however, is another matter. Using a theory-consistent gravity equation and an estimator reflecting many of the recent advances in the econometrics of international trade, this paper has investigated the trade effects of the CEFTA agreement. In 2009, Will Bartlett remarked that the Western Balkan countries had been 'engaged in a complex and contradictory process of simultaneous regional integration and disintegration' (2009: 44). Our results broadly confirm this proposition.

Controlling for a wide range of other influences, we find little evidence to suggest that CEFTA functioned as a trade-creator. By contrast, we find that North-South trade policy instruments have indeed increased regional exports to advanced economies. We explain this difference in terms of the comprehensiveness of trade agreements, arguing that the SAAs, for instance, promote much 'deeper' economic integration between individual CEFTA countries and the EU, than CEFTA does at the regional level. We also find significant variation in the ability of individual CEFTA members to take advantage of trade liberalization in the region and suggest that this may be due to variation in the supply-side environment across individual CEFTA members.

The post-socialist/post-war transition period seems to have promoted a 'hub-and-spoke' export pattern, with individual CEFTA members supplying raw-material inputs and medium- and, especially, low-skill manufactures to advanced economies *outside the region*, chiefly the EU (Bartlett, 2008: 135). This is especially evident in the new *maquila* industries that have mushroomed across the region – notably in the textile and footwear sectors (Luginbuhl and Musiolek, 2016). With their high import-dependence, narrow focus on labour-intensive assembly operations, and sometimes appalling working conditions, these new sectors do not bode well for the future of export-oriented industry in the Balkans, or for the prospect of long-term wage and income growth. Overall, increases in national income have also tended to translate into higher volumes of (consumer goods) imports than higher levels of exports, aggravating already-existing balance-of-payment problems.

These trends raise troubling questions about the trade-development nexus in the Balkans. If Balkan countries are to avert the 'export-led growth failures' of other middle-income economies, notably Mexico (Palma, 2009), regional integration mechanisms should be overhauled and 'deepened'. To this end, the EU or MERCOSUR model of a customs union should be the obvious reference. As noted by UNCTAD (1964: 75), however, 'no guarantee of [market access] could replace measures [...] to stimulate industries capable of production for export'. More proactive supply-side policies and coordinated export-promotion efforts are sorely needed, both at the individual-country level and region-wide.

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APPENDIX I: The Heckscher-Ohlin Model and the Gravity Equation

Letting XS denote export supply and MD import demand, the gravity equation is simply ‘an expenditure equation with a market-clearing condition imposed’ (Baldwin and Taglioni, 2007: 783). At the market-clearing quantity (Q_*), exports equal $X_{ij} = Q_* \cdot P_{XS}(Q_*)$, i.e. the area highlighted in Figure 1. The derivation below shows that this expenditure function may be re-written as a gravity equation with form (1). Holding everything else constant, X_{ij} increases as output in i expands (rightward shift of S_i) or as demand increases with rising income in j (rightward shift of D_j). At the same time, higher trade costs (t_{ij}) reduce X_{ij} .

[Figure A1]

Letting S_i , D_i , S_j and D_j have a constant elasticity:

$$\ln q_i^D = -\delta_i \ln p_i^D + \ln D_i \quad (I1)$$

$$\ln q_i^S = +\sigma_i \ln p_i^S + \ln S_i \quad (I2)$$

$$\ln q_j^D = -\delta_j \ln p_j^D + \ln D_j \quad (J1)$$

$$\ln q_j^S = -\sigma_j \ln p_j^S + \ln S_j \quad (J2)$$

we can derive export supply and import demand equations:

$$\ln Q_{XS} = \ln q_i^S - \ln q_i^D = (\sigma_i + \delta_i) \ln P_{XS} + \ln \left(\frac{S_i}{D_i} \right) \quad (A3)$$

$$\ln Q_{MD} = \ln q_j^D - \ln q_j^S = -(\sigma_j + \delta_j) \ln P_{MD} + \ln \left(\frac{D_j}{S_j} \right) \quad (A4)$$

Exponentiating through (A3) and (A4), and solving for P_{XS} and P_{MD} , we can then obtain the quantity Q_* that satisfies the market-clearing condition:

$$P_{MD}(Q_*) = \tau_{ij} P_{XS}(Q_*)$$

where τ_{ij} is the trade cost factor (the ratio of exporter to importer prices). Using the definition of expenditure $X_{ij} = Q_* \cdot P_{XS}(Q_*)$, we then obtain the following expression for bilateral trade:

$$X_{ij} = g S_i^\alpha D_j^\beta \tau_{ij}^c \quad (A5)$$

where $g = (D_i^\alpha S_j^\beta)$ and α , β and c are non-linear combinations of $\sigma_{i,j}$ and $\delta_{i,j}$. Since S_i (the intercept of i 's supply curve) depends on i 's supply capacity, and D_i (the intercept of j 's demand curve) depends on income in j , eq. (1) may be easily recovered from (A5).

Needless to say, there are easier ways to derive the gravity law in an HO framework (Anderson, 1979). We choose this approach because it provides a simple graphical interpretation (Figure 1)

APPENDIX II: Supply-Side Factors and Interaction Terms

Following on from Appendix I, and holding S_j and D_i , and σ_j and $\delta_{i,j}$ constant, α , β and c may be written as *non-linear* functions F_x of the slope of the supply curve in i , i.e. σ_i :

$$x = F_x(\sigma_i), \quad x \in \{\alpha, \beta, c\} \quad (A6)$$

Substituting (A6) into a log-linearised version of (A5) yields:

$$\ln X_{ij} = G + F_{\alpha}(\sigma_i) \cdot \ln S_i + F_{\beta}(\sigma_i) \cdot \ln D_j + F_c(\sigma_i) \cdot \ln \tau_{ij} \quad (A7)$$

Since F_x is non-linear, however, we *cannot* simply write the log-linear relation that would lead to simple interaction terms in the regression equation: i.e. $F_c(\sigma_i) = a (\ln \sigma_i) + b$, where a and b are parameters, which would imply $F_c(\sigma_i) \cdot \ln \tau_{ij} = a (\ln \sigma_i) \cdot (\ln \tau_{ij}) + b (\ln \tau_{ij})$. Thus, estimating (A7) is far from straightforward.

APPENDIX III: Diagnostic Tests for the PPML Estimators

SST (2006: 646) propose two diagnostic tests for the PPML estimator. The Park test can be used to choose between PPML and OLS. The null is that H_0 : 'estimation by OLS in the log-linear form yields consistent estimates of the parameters'. The Park test can be performed by estimating the following auxiliary regression:

$$\ln(X_{ijt} - \widehat{X}_{ijt})^2 = a_0 + a_1 \ln \widehat{X}_{ijt} + u_{ijt}$$

(where the cap denotes the fitted values of trade) and testing for $H_0: a_1 = 2$.

The Gauss-Newton regression tests for $H_0: V[X_{ij} | \vec{z}_{ij}] \propto E[X_{ij} | \vec{z}_{ij}]$. The test statistic is the estimated parameter b_1 in the following auxiliary regression, which should be estimated using a heteroskedasticity-robust OLS estimator:

$$(X_{ijt} - \widehat{X}_{ijt})^2 / \sqrt{\widehat{X}_{ijt}} = b_0 \sqrt{\widehat{X}_{ijt}} + b_1 \ln \widehat{X}_{ijt} \cdot \sqrt{\widehat{X}_{ijt}} + v_{ijt}$$

APPENDIX IV: List of Countries

Partner Countries (54)

Algeria
Argentina
Armenia
Austria
Azerbaijan
Belarus
Belgium
Brazil
Bulgaria
Canada
China
Czech Republic
Denmark
Egypt
Estonia
Finland
France
Georgia
Germany
Greece

Hungary
India
Indonesia
Iran
Ireland
Israel
Italy
Japan
Jordan
Kazakhstan
Latvia
Lebanon
Lithuania
Luxembourg
Morocco
Netherlands
Norway
Poland
Portugal
Romania
Russia
Saudi Arabia
Slovakia
Slovenia
South Korea
Spain
Sweden
Switzerland
Tunisia
Turkey
Ukraine
United Kingdom
USA
Vietnam

Reporter Countries (8)

Albania
Bosnia and Herzegovina
Croatia
Kosovo *
Macedonia
Moldova
Montenegro
Serbia

APPENDIX V: Variable Definitions and Sources

Variable	Definition	Source
Exports	Log of total value of exports, by reporter (current US\$). The data used are in 10m.	United Nations, <i>Comtrade Database</i> (online source); Kosovo* Customs for Kosovo* data, personal communication; MakStat, online source.
Imports	Log of total value of imports, by reporter (current US\$). The data used are in 10m.	United Nations <i>Comtrade Database</i> (online source); Kosovo* Customs for Kosovo* data, personal communication;
Trading nations' GDP (Reporter's GDP and Partner's GDP)	Log of all trading nations' GDPs in current US dollars. The data used are in 10m.	World Bank – <i>World Development Indicators</i> , (2016) online source.
Distance	Great circle distance between capital cities.	Distance Calculator: http://www.infoplease.com/atlas/calculate-distance.html
Pre-CEFTA FTAs	Dummy variable: It takes the value 1 for all the reporters (Western Balkan) countries that had signed a bilateral free trade agreement prior to 2007.	Author's construction based on data from the CEFTA Secretariat, http://www.cefta.int
CEFTA	Dummy variable: It takes the value 1 for all the reporter countries for the period 2007-2011, and zero otherwise.	Authors' construction.

FTAs	Dummy variable: It takes the value 1 whenever the reporter countries have a bilateral Free Trade Agreement with extra-regional partners (excluding the EU), and zero otherwise.	Authors' construction based on World Trade Organization data, http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx
SAA (Stabilization and Association Agreement) with EU	It takes the value 1 whenever the reporter country has entered into a Stabilization and Association Agreement with the EU, and zero otherwise.	Authors' construction based on World Trade Organization data, http://rtais.wto.org/UI/PublicMaintainRTAHome.aspx
GSP (General System of Preferences)	It takes the value 1 whenever reporter countries have been granted GSP preferences by (advanced country) trading partners and zero otherwise.	Authors' construction based on World Trade Organization data, http://ptadb.wto.org/ptaList.aspx
WTO (World Trade Organization)	It takes the value 1 if partner and reporter are <i>both</i> WTO members and zero otherwise.	Author's construction based on World Trade Organization data, https://www.wto.org/english/thewto_e/whatis_e/tif_e/org6_e.htm
Ottoman Rule	An index that measures the numbers of years of Ottoman rule in reporter countries.	Grosjean, 2011.
Yugo-Soviet	Dummy variable: It takes the value 1 whenever reporter and partner countries were part of the same supranational entity (Yugoslavia and Soviet Union) between 1945-1990.	Authors' construction.
Landlocked - Partner	Dummy variable: It takes the value 1 whenever the partner country is landlocked (has no access to the sea) and zero otherwise.	Authors' construction.
Landlocked - Reporter	Dummy variable: It takes the value of 1 whenever the reporter country is landlocked (has no access to the sea) and zero otherwise.	Authors' construction.
Contiguity	Dummy variable: It takes the value 1 whenever reporter and partner countries share a common border and zero otherwise.	Authors' construction.

Common Currency (Euro)	Dummy variable: It takes the value 1 whenever reporter and partner countries share a common currency and zero otherwise. The only common currency that is shared by more than one country is the Euro.	Authors' construction.
Rule of Law - Partner	An index of 'Rule of Law' for the Partner country, rescaled to run from 0 to 1, with higher numbers signifying better rule of law.	World Bank – <i>Worldwide Governance Indicators</i> , (2016)
Rule of Law - Reporter	An index of 'Rule of Law' for the Reporter country, rescaled to run from 0 to 1, with higher numbers signifying better rule of law.	World Bank – <i>Worldwide Governance Indicators</i> , (2016)
Corruption - Partner	An index of 'Control of Corruption' for the partner Country, rescaled to run from 0 to 1, with higher numbers signifying less corruption.	World Bank – <i>Worldwide Governance Indicators</i> , (2016)
Corruption - Reporter	An index of 'Control of Corruption' for the reporter Country, rescaled to run from 0 to 1, with higher numbers signifying less corruption.	World Bank – <i>Worldwide Governance Indicators</i> , (2016)
No recognition (Kosovo [*])	Dummy variable: It takes the value 1 for partner countries that do not recognize Kosovo [*] (2008-2011) and zero otherwise.	Authors' construction based on different sources.
No statehood (Kosovo [*])	Dummy variable: It takes the value 1 for Kosovo [*] as a reporter country prior to independence (2006-2007).	Authors' construction.
Common religion	Share of partner country's population that practices the reporter's main religion.	Authors' construction based on the CIA World Factbook data.
Common language	Dummy variable: It takes the value 1 if reporter and partner country share a common official language (for example, if Kosovo [*] is the reporter, the variable takes the value 1 for Albania and Macedonia and zero otherwise).	Authors' construction.
Diaspora	Dummy variable: It takes the value 1 for the two partner countries hosting each CEFTA reporter's largest diaspora communities. For example, diaspora equals 1 for Italy and Greece whenever Albania is the reporter country, and 0 otherwise.	Authors' construction based on various sources.

TABLE 1: Determinants of Trade: Export Equation (2006-11)

	RE Gamma	RE Gamma	RE Gamma	RE Normal	FE Dynamic	FE Static
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Main Gravity Variables:</u>						
Log (Reporter's GDP)	.6012* (.2859)	.5519* (.2652)	.6116* (.2848)	.6028* (.2855)	6541* (.2894)	.8092** (.2926)
Log (Partner's GDP)	.6985** (.2289)	.6409** (.2339)	.7088** (.2290)	.6909** (.2274)	.4944* (.2461)	6802* (.3036)
Log (Distance)	-1.489*** (.1243)	-1.480*** (.1244)	-1.402*** (.1457)	-1.543*** (.1182)		
Log (Δ GDP per capita)	-.0161 (.0324)	-.0124 (.0325)	-.0126 (.0331)	-.0134 (.0324)	-.0100 (.0324)	.0081 (.0229)
<u>Trade Policy</u>						
Pre-CEFTA FTAs						-.0424 (.1097)
CEFTA	.0651 (.2400)	.1237 (.2454)	.5049* (.2467)	.0152 (.2763)		-.0114 (.1087)
FTAs	.1786 (.1342)	.1887 (.1298)	.1829 (.1397)	.2017 (.1375)	.1396 (.1548)	.1494 (.1632)
SAA with EU	.3429*** (.0894)	.3169*** (.0885)	.3224*** (.0898)	.3458*** (.0906)	.28764** (.10324)	.2696** (.1014)
GSP	.2626** (.0758)	.2489** (.0748)	.2413** (.0759)	.2687*** (.0771)	.2201* (.0878)	.17436* (.08094)
WTO	.04008 (.1281)	.11353 (.12138)	-.03923 (.13193)	-.00435 (.1232)	-.5016*** (.0622)	-.4691*** (.1003)
<u>Historical Legacies</u>						
Lagged Exports	.0044** (.0015)	.0044** (.0014)	.0044** (.0015)	.0044** (.0015)	.0044** (.0014)	
Ottoman Rule	.0352** (.0120)	.0133 (.0091)	.0297* (.0129)	.0376** (.0125)		
YugoSoviet	1.570*** (.2181)	1.611*** (.2202)		1.659*** (.2306)		
<u>Geography</u>						
Landlocked - Partner	.3045* (.1323)	.3200* (.1339)	.3104 + (.1683)	.2206 (.1349)		
Landlocked - Reporter	.6241*** (.1466)	.4566*** (.1192)	.7385*** (.1696)	.7215*** (.1354)		
Contiguity	-.0599 (.1833)	-.0942 (.1905)	-.0984 (.1860)	.0223 (.2113)		
<u>Institutions</u>						
Common Currency (Euro)	-.2301 (.2884)	-.2851 (.2877)	-.1216 (.3144)	-.2758 (.2787)	1.251** (.4102)	.1420 (.1365)
Rule of Law - Partner	-.0445 (.1095)		-.0358 (.1093)	-.0439 (.1097)	-.0328 (.1114)	-.0210 (.1125)
Rule of Law - Reporter	-.2662+ (.1483)		-.2673 + (.1492)	-.2661+ (.1485)	-.1970 (.1499)	-.2801+ (.1447)
Corruption - Partner		.0378 (.0575)				
Corruption - Reporter		-.0212 (.1133)				
No recognition (Kosovo [*])	-1.362 + (.7131)	-1.468* (.7048)	-1.361* (.6467)	-1.398* (.5827)	-.8718 (.5838)	-1.035 + (.5848)

No statehood (Kosovo [*])	-.6734** (.2457)	-.6904** (.2503)	-.6650** (.2356)	-.6869** (.2265)	-.3899 (.2821)	-.5062 + (.2744)
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Cultural Factors

Log (Common Religion)	.0516* (.0218)	.0529* (.0217)	.0610* (.0247)	.0387+ (.0221)		
Common Language	.7530** (.2734)	.7374** (.2778)	.8234** (.2564)	.7389** (.3008)		
Diaspora	.7019** (.2224)	.6788** (.2277)	.7188** (.2497)	.9208*** (.2287)		
Initial Conditions	Yes	Yes	Yes	Yes	No	No
Group Averages	Yes	Yes	Yes	Yes	No	No
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,440	2,440	2,440	2,440	2,340	2,814
R ²				0.98	0.15	0.05
RESET test [p-value]:	[0.768]	[0.677]	[0.434]	[0.800]	[0.029]	[0.000]

Notes: robust standard errors in parenthesis. Significance levels: + = p < .1, * = p < .05, ** = p < .01, *** = p < .001. Since STATA's >predict< command does not integrate over the individual effect after >xtpoisson, re<, the R² cannot be meaningfully computed for the RE (Gamma) models. To compute the R² for the RE (Normal) model, we exploit the new features of STATA 14's >predict< command, which takes into account the random effect when employed after the multilevel mixed-effects Poisson estimator (>mepoisson<), which can be used to produce an equivalent output to >xtpoisson, re normal<.

TABLE 2: Determinants of Trade: Import Equation (2006-11)

	RE Gamma	RE Gamma	RE Gamma	RE Normal	FE Dynamic	FE Static
	(1)	(2)	(3)	(4)	(5)	(6)
<u>Main Gravity Variables:</u>						
Log (Reporter's GDP)	1.027*** (.1858)	.9505*** (.1777)	1.033*** (.1850)	1.026*** (.1872)	1.063*** (.1812)	1.421*** (.1811)
Log (Partner's GDP)	.0313 (.1119)	.0250 (.1131)	.0350 (.1058)	.0399 (.1017)	.0549 (.0726)	.0754 (.0775)
Log (Distance)	-.4404** (.1325)	-.4377** (.1260)	-.4341*** (.1188)	-.7097*** (.1430)		
Log (Δ GDP per capita)	.0057 (.0159)	.0073 (.0158)	.0059 (.0158)	.0058 (.0158)	.0051 (.0157)	.0016 (.0165)
<u>Trade Policy</u>						
Pre-CEFTA FTAs						.3131** (.1094)
CEFTA	-.3833 (.2975)	-.3842 (.2982)	.1165 (.2672)	-.3742 (.2864)		.3081** (.1094)
FTAs	-.0018 (.0310)	-.0011 (.0287)	-.0027 (.0308)	-.0055 (.0325)	-.0149 (.0341)	.0434 (.0338)
SAA with EU	.0138 (.0378)	.0047 (.0367)	.0144 (.0378)	.0200 (.0380)	.0148 (.0382)	.0335 (.0377)
WTO	-.0348 (.1092)	-.0318 (.1002)	-.07351 (.09707)	-.0035 (.1196)	-.2207** (.0810)	-.2977*** (.0822)
<u>Historical Legacies</u>						
Lagged Imports	.0012* (.0005)	.0013* (.0005)	.0012* (.0005)	.0012* (.0005)	.0011* (.0005)	
Ottoman Rule	.0283** (.0108)	.0262** (.0091)	.0264* (.0111)	.0247 + (.0128)		
YugoSoviet	1.056*** (.2420)	1.084*** (.2417)		1.364*** (.2513)		
<u>Geography</u>						
Landlocked - Partner	.0243 (.1364)	.0211 (.1356)	.0325 (.1405)	.1517 (.1594)		
Landlocked - Reporter	.0075 (.1357)	-.0093 (.1166)	.1473 (.1311)	.0577 (.142)		
Contiguity	.5138* (.2405)	.5166* (.2418)	.4314 (.2764)	.6475* (.3334)		
<u>Institutions</u>						
Common Currency (Euro)	.0100 (.2039)	.0196 (.2032)	.0802 (.2075)	-.1223 (.2033)	-.0423 (.0282)	-.1803** (.0537)
Rule of Law - Partner	.0267 (.0927)		.0266 (.0924)	.0268 (.0923)	.0183 (.0918)	.0078 (.0888)
Rule of Law - Reporter	.0474 (.1010)		.0461 (.1007)	.0390 (.1008)	.0479 (.0994)	-.0526 (.0992)
Corruption - Partner		.0215 (.0457)				
Corruption - Reporter		.1665* (.0655)				
No recognition (Kosovo [*])	-.2117 + (.1230)	-.2159 + (.1233)	-.2033 + (.1231)	-.2420* (.1086)	-.2094* (.0955)	-.1613 (.1425)
No statehood (Kosovo [*])	-.2925*** (.0539)	-.2564*** (.0577)	-.2882*** (.0541)	-.3072*** (.0522)	-.2794*** (.0490)	-.2065** (.0664)

<i>Cultural Factors</i>						
Log (Common Religion)	-.0327 (.0256)	-.0316 (.0255)	-.0225 (.0259)	-.0374 (.0266)		
Common Language	.6048* (.2836)	.5978* (.2850)	.7079* (.3016)	.8828* (.4014)		
Diaspora	.2943 (.2052)	.2840 (.2045)	.3395 (.2292)	.4468 + (.2608)		
Initial Conditions	Yes	Yes	Yes	Yes	No	No
Group Averages	Yes	Yes	Yes	Yes	No	No
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,440	2,440	2,440	2,440	2,340	2,814
R ²				0.99	0.22	0.14
RESET test [<i>p</i> -value]:	[0.052]	[0.063]	[0.106]	[0.000]	[0.318]	[0.608]

Notes: robust standard errors in parenthesis. Significance levels: + =*p*<.1, * =*p*<.05, ** =*p*<.01, *** =*p*<.001. See notes to Table 1 for the computation of the R².

TABLE 3: Comprehensiveness of Trade Agreements (By Type of Provision)

	N	WTO-related		non-WTO-related	
		Any	Enforceable	Any	Enforceable
EU	1	0.85	0.85	1.00	1.00
Pre-CEFTA FTAs	19	0.87	0.72	0.46	0.46
SAs with EU	5	0.78	0.71	0.65	0.55
CEFTA	1	0.77	0.69	0.50	0.50
FTAs (other)	9	0.74	0.61	0.47	0.47

Sources: author's calculations from Kohl et al. 2016, online database; Notes: N stands for number of trade agreements included in the averages. A higher value indicates a higher degree of comprehensiveness. WTO-related provisions confirm countries' existing obligations under the WTO agreement.

TABLE 4: Intra-Industry Trade (RE Normal)

	Exports	Imports
	(1)	(2)
...
<u>Trade Policy</u>		
GSP	.2713** (.0782)	
SAA with EU	.3495*** (.0913)	.0192 (.0380)
FTAs	.20614 (.1384)	-.0017 (.0331)
WTO	-.0027 (.1229)	-.0001 (.1198)
CEFTA	-.3755 (.7427)	-1.592 ** (.5213)
<u>Interactions:</u>		
CEFTA · Log(Δ GDP per capita)	-.02393 (.0411)	-.0740** (.0265)
Log(Δ GDP per capita)	-.0061 (.0403)	.0112 (.0165)
Observations	2,440	2,440
<u>Constant Elasticity of Log(Δ GDP per capita):</u>		
'Average' Constant Elasticity	-.0089 (.0373)	.0027 (.0153)
Constant elasticity at CEFTA = 1	-.0301 (.0329)	-.0629** (.0235)
Constant elasticity at CEFTA = 0	.0062 (.0404)	.0112 (.0166)

Notes: robust standard errors in parenthesis. Significance levels: + = $p < .1$, * = $p < .05$, ** = $p < .01$, *** = $p < .001$. The other variables are not reported to save space. The constant-elasticity estimates are obtained using STATA's >argins< command (delta-method standard errors in parenthesis). All models include initial conditions and group averages of all time-varying exogenous variables.

TABLE 5: Determinants of Trade in Individual CEFTA Countries: Export Equation (RE Gamma)

	Albania	Macedonia	Kosovo [*]	Serbia	Croatia	BiH	Moldova	Montenegro
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
...
<i>Trade Policy</i>								
CEFTA	2.103* (.8336)	1.056 + (.6377)	1.246 (1.145)	.5166 (.3700)	.2479 (.2200)	-.1921 (.3836)	-.9718 + (.5332)	-4.622*** (.9031)
FTAs	1.789* (.7584)	.4568 (.6143)		.3100 (.2499)	.1468 (.2932)	.2801 (.2840)	-.6205 (.4710)	2.491 + (1.315)
SAA with EU	1.459* (.5807)	1.289** (.4955)		.7059** (.2634)	.0464 (.1902)	.4690 (.3216)		.6957 (.8197)
GSP	1.289* (.6301)	-.0212 (.3590)	.3397 (1.167)	.5594* (.2402)	.4274** (.1611)	.4752 (2998)	.1173 (.2191)	1.032 (.7325)
WTO	.2290 (.6452)	.2859 (.8449)			-.0481 (.2616)		-.0773 (.2191)	
Lagged Exports	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Observations	366	305	305	305	366	305	305	305

Notes: robust standard errors in parenthesis. Significance levels: + = p<.1, * = p<.05, ** = p<.01, *** = p<.001. The other variables are not reported to save space. All models include initial conditions and the group averages of all time-varying exogenous variables.

FIGURE A1: The Heckscher-Ohlin Model and the Gravity Equation

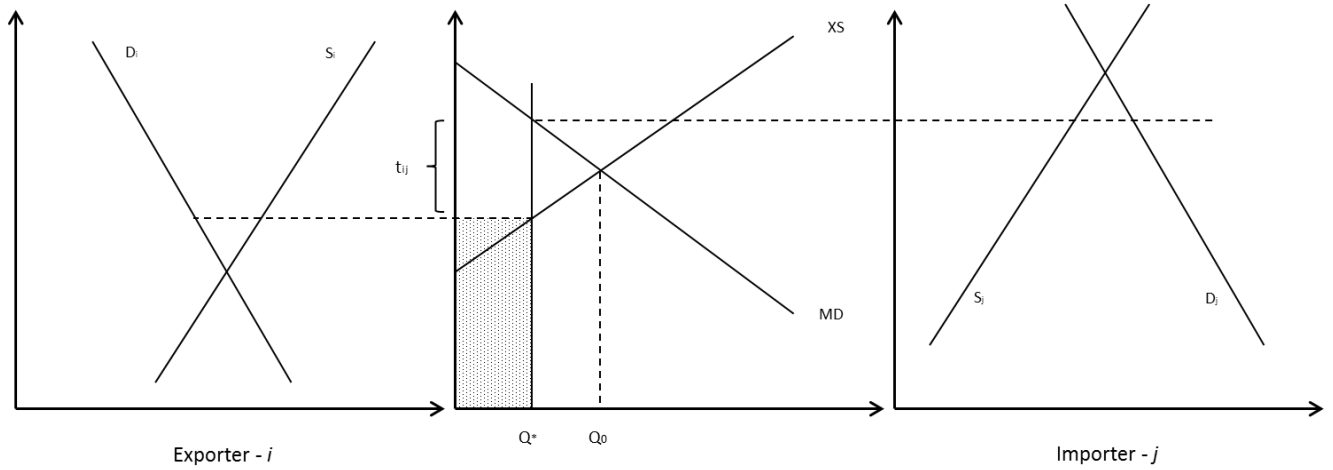


FIGURE 2: Gross Domestic Savings and Intra-Regional Trade in CEFTA, 2006-11

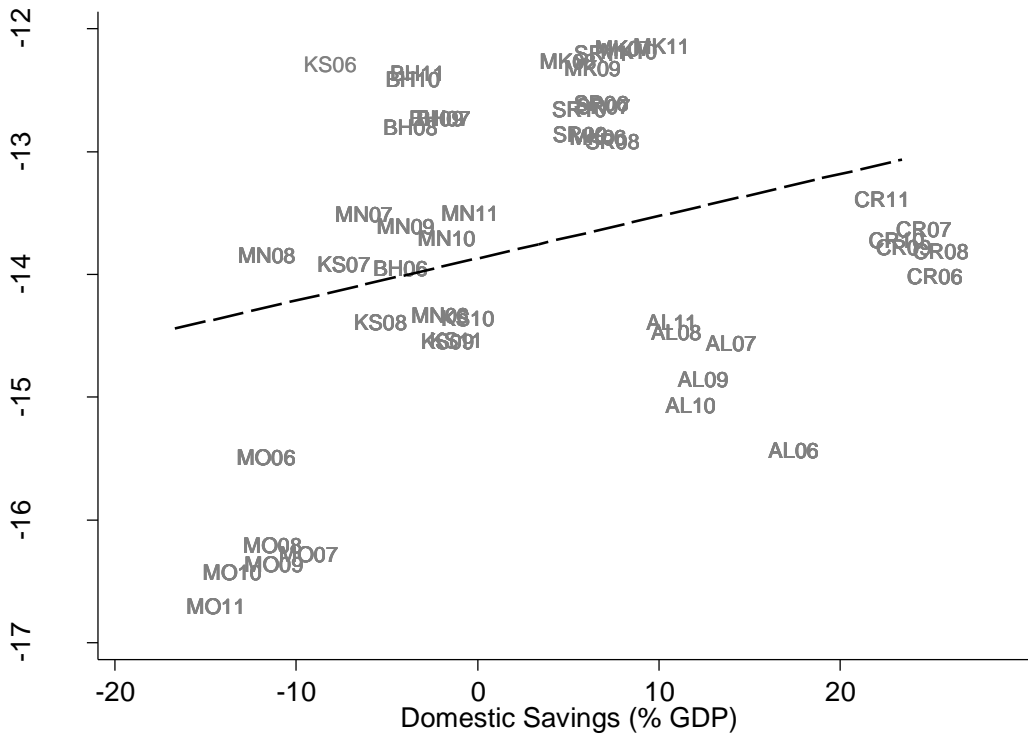


FIGURE 3: FDI and Intra-Regional Trade in CEFTA, 2006-11

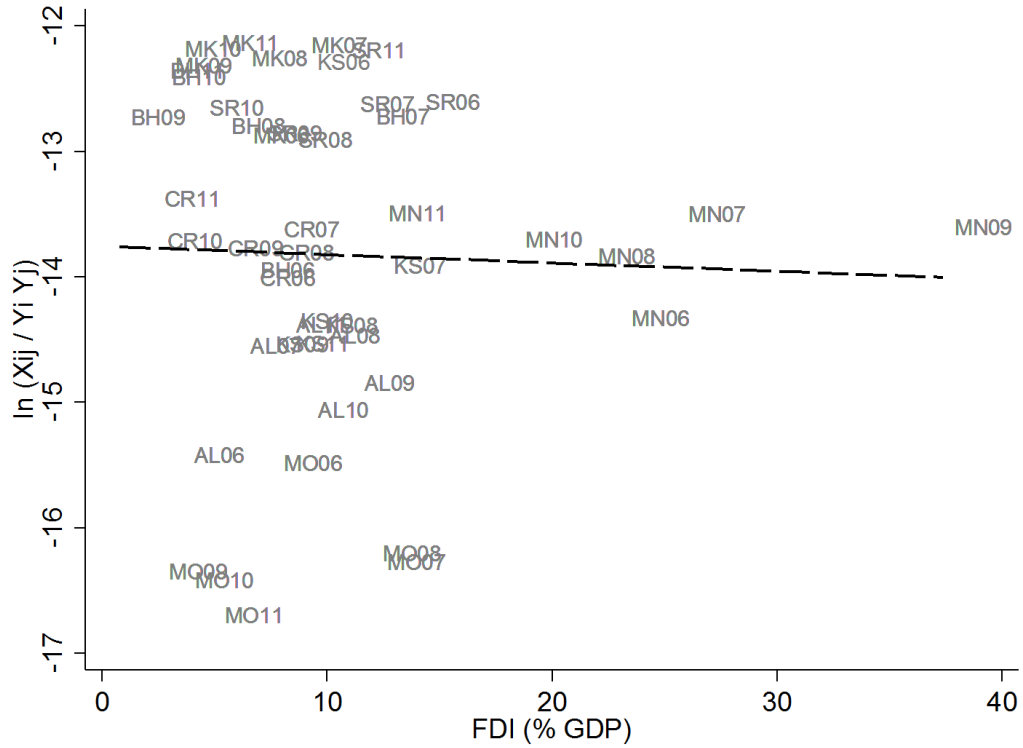


FIGURE 4: Foreign Loans and Intra-Regional Trade in CEFTA, 2006-11

