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Has CEFTA Increased Members' Mutual Trade? Evidence with an Enlarged Set of Plausibly Exogenous Instruments*

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Abstract

The objective of the paper is to measure the effect of the Central European Free Trade Agreement (CEFTA) in its today's composition on members' mutual trade. Special consideration is given to CEFTA endogeneity stemming from members' will to form a trade bloc as a vehicle to approximate EU sooner and prevent further misunderstandings in the Balkan. We use a Conditional Mixed Process estimator whereby CEFTA is instrumented by a set of variables measuring democracy and governments' negotiation will. The recent Conley et al. (2012) method is used to deal with only plausibly exogenous instruments. The 1996-2015 period is covered. Results suggest that CEFTA played quantitatively large and statistically significant role for its members. When endogeneity is considered, the effect of CEFTA on its members' mutual trade is found even higher by 60% to 72%. This may indirectly suggest that CEFTA trading power has been drawn not only from countries' GDPs and proximity, but also from their governments' will to establish level playing field for cooperation and approach the EU quicker. However, if instruments' strict exogeneity cannot be secured by the means of argument or statistical tools, then results suggest that CEFTA effect's amplification may be rather driven, at least partially, by the correlation between the instrument and trade shocks.

1. Introduction

The Central European Free Trade Agreement (CEFTA) in today's composition has been in existence since December 2006. However, CEFTA dates back to 1992 when Central European countries joined in a trade bloc to increase trading, but also to prepare their economies for the joining of the EU. Then, as members were joining the EU, they were leaving CEFTA, so that today it reduces to the Western Balkan economies of Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Moldova, Montenegro and Serbia[1][2]. Despite the aim of CEFTA to increase intra-regional trade of the members has not changed over time (CEFTA, 2006, p.2), CEFTA has been also thought as a response to some fears (Baldwin, 1994) that a strong trading block as is the EU will seize these countries' export and render them more vulnerable to shocks coming from the EU (as has been shown during the European Sovereign Crisis 2011-2013). Hence, colloquially, CEFTA has had two basic objectives: i) to test members' capacity to work together within a regional agreement and build their competitiveness,

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[1] Only Moldova does not belong to the Western Balkan's bloc.
[2] The entire analysis and discussion in this paper refers to CEFTA in today's composition.

as well institutions, democratic and cooperation capacity; and ii) to oppose the growing dependence of these countries on the trade with the EU by re-establishing the regional market. However, bringing Western Balkan countries under a single economic umbrella likely has political axis also: working together would ease tensions and prevent further conflicts in the Balkan, which earmarked the last decade of the XX century.

The paper draws on a strand of literature investigates the impact of the trade agreements on trade but treating free trade agreements (FTA) as endogenous creation. Namely, FTAs are usually formed by neighboring countries, which often share common past, similar languages and size. In the gravity framework, this 'selection on observables' has been captured by including variables on GDP as well dummies to reflect cultural and physical proximities. However, in the case of CEFTA, countries were inclined to join a trade bloc in order to speed up their EU approximation process, as a vehicle to improve their democratic standards and governance, hence preventing inter-ethnic and inter-country strains in the future. This, so-called, 'selection on unobservables' could be captured by using instrumental-variables method.

Therefore, the objective of the paper is to provide a quantitative estimate of CEFTA's impact on mutual trade by treating CEFTA as endogenous creation. In addition, we estimate the effect of the Stabilization and Association Agreements of these countries with the EU on trade, in order to understand if CEFTA managed to compete with the creation of trade dependence of its members on the EU economies. We rely on a trade matrix of 36 countries spanning over 1996-2015. We utilize the Conditional Mixed Process (CMP) estimator of Roodman (2011), as well Conley et al. (2011) procedure to deal with only plausibly exogenous instruments. The paper brings a couple of novelties compared to previous attempts to estimate CEFTA impact (e.g. Petreski, 2013). *First,* we disregard the period before 1996, which was marked with trade interruptions caused by conflicts, wars and embargoes. *Second,* compared to previous estimates, by extending to 2015, we estimate CEFTA's impact on trade more effectively due to the increased number of available observations. *Third,* by utilizing CMP, we are able to estimate the first-stage probability that a country belongs to CEFTA on a set of instruments in a probit function, which is not possible under the standard set of methods. *Finally,* we draw on extensive set of instruments to address the selection on unobservables and take special care of their potential departure from strict exogeneity.

Results suggest that CEFTA played quantitatively large and statistically significant role for its members. Under CEFTA, members increased their trade on average by 74% compared to the period before and to the other countries without FTA membership. When selectivity on unobservables is considered, the effect of CEFTA on members' trade further intensifies: trade is estimated to have increased under CEFTA by 118% to 127%. The latter suggests that ignoring CEFTA's endogeneity undervalues the effect by sizeable 60% to 72%. This may indirectly suggest that CEFTA trading power has been drawn not only from countries' GDPs and proximity, but also from their governments' will to set a level playing field for cooperation and approach the EU quicker. However, if instruments' strict exogeneity cannot be secured by the means of argument or statistical tools, then results suggest that CEFTA effect's

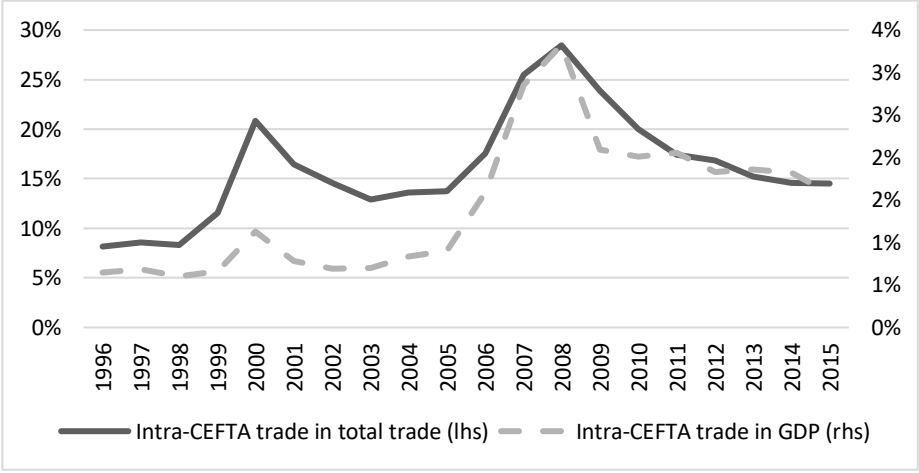
amplification may be rather driven by the correlation between the instrument and trade shocks, at least partially.

The paper is structured as follows. Section 2 briefly reviews the trade developments in the CEFTA bloc. Section 3 reviews the literature. Section 4 presents the data and underlying methodology. Section 5 presents the results and offers a discussion. Section 6 concludes.

2. Trade Developments in the CEFTA Bloc

Trade within the CEFTA region has been significantly subdued over the 1990s, due to the many conflicts, wars, political and economic embargoes within the region. While some trade pick-up has been noted in the first half of the 2000s, the intraregional trade swelled only after 2005 (Figure 1). The period for such stellar increase of the intraregional trade coincides with the joining up of the Western Balkan countries and Moldova in CEFTA, but also with the period of the Great Moderation, within which many of the Western Balkan countries experienced 2006 and 2007 as their best economic years since the breakup of the socialist system. As the Great Economic Crisis hit the region in 2008, the trade suffered first. However, as Figure 1 suggests, the intraregional trade level was somehow maintained above the pre-2006 level, giving more robust support that CEFTA underlies trade expansion.

Figure 1 Intra-CEFTA Trade

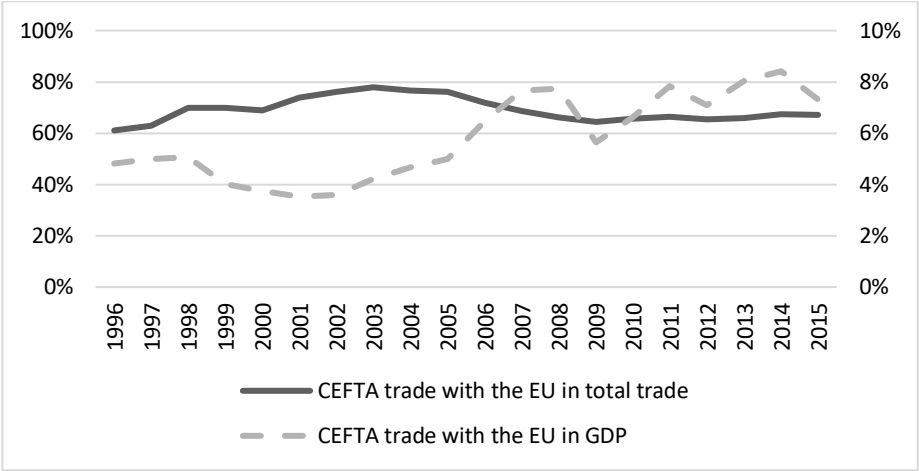


Source: Direction of Trade Statistics.

On the other hand, over the same period, CEFTA bloc's trade with the EU does not mark any large shifts. Figure 2 suggests the share of trade with the EU remained consistently high, at above 60% of total trade. Still, the figure presents an important pattern: the relative trade (to total trade, and to GDP, in particular) noted a significant increase in the first half of the 2000s; recall this was a period of stagnant intraregional trade (Figure 1). Such developments contributed to the rising fear that CEFTA members will become too dependent on the EU trade, hence exposed to various shocks

that EU may go through. After 2006, the CEFTA trade with the EU stabilizes around 65% of total trade and 7% of the combined GDP.

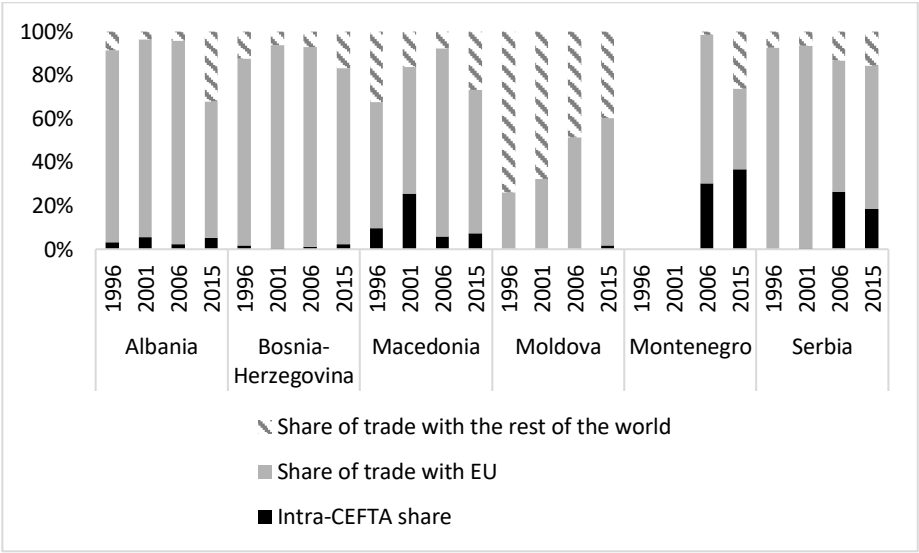
Figure 2 CEFTA Trade with the EU



Source: Direction of Trade Statistics.

In addition to the trade developments, early-to-mid 2000s were the period when CEFTA bloc countries started expressing – more forcibly – their will to commence the road to EU accession. The Stabilization and Association process – resulting in Stabilization and Association Agreements (SAA) between the countries and the EU – has been an important milestone on that road. Macedonia was the first within the CEFTA bloc to sign SAA in 2001, followed by Croatia (2002, a member of CEFTA until 2013), Albania (2006), Bosnia-Herzegovina and Montenegro (2008), Serbia (2010), Moldova (2014) and Kosovo (2015). SAA envisaged, inter alia, a gradual reduction of tariffs between those countries and the EU in an asymmetric manner, hence contributing to expanding the trade between these countries and the EU.

Figure 3 Trade Composition of CEFTA Members



Source: Direction of Trade Statistics.

3. Theoretical Foundations and Empirical Considerations

The Gravity model became the conventional model in the literature to measure the effects of bilateral and multilateral free trade agreements on bilateral trade. The renewed attention to the theoretical foundations of gravity equations has resulted in their formulations that derive from general equilibrium modeling of bilateral trade patterns (Feenstra, 2002; Anderson and van Wincoop, 2003). In its simplest and conventional form, the gravity model estimates bilateral trade flows as a function of the income levels 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 capitals 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 variables that support or reduce trade, 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 trade and have 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. This effect is usually captured through a variable that measures the difference between per capita incomes of the trading partners. In addition to such conventional gravity models, generalized gravity models include price and exchange rate variables (Pugh and Tyrrall, 2000; Micco et al. 2003; Graham et al. 2006).

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, 2010; Feenstra, 2002). These effects are defined as a function of unobservable equilibrium price indices, and depend on bilateral trade barriers and income shares of all the trading partners. In other words, the term 'multilateral resistance' summarizes the effects on a given bilateral trade from differential, possibly unobserved, trade costs between this-countries pair and all other trading partners. The gravity equation can then be interpreted as indicating that bilateral trade depends on the trade barriers between the two countries relative to their multilateral resistance indices: for a given bilateral trade barrier between the two countries, 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 can be conveniently proxied by individual country effects. Finally, time effects should be included in the model to control for time-specific factors such as world business cycles and global shocks, as always suggested strategy in the panel literature (for instance, Sarafidis et al. 2009).

Tinbergen (1962) was the first to evaluate the effect of the membership in the British Commonwealth (Benelux FTA) on trade. His results suggested that the FTA was associated with 5% higher trade. Since then, results have been mixed, at best. Aitken (1973), Abrams (1980), and Brada and Mendez (1983) found the European Community (EC) having an economically and statistically significant effect on trade among members, whereas Bergstrand (1985) and Frankel et al. (1995) found insignificant effects. Frankel (1997) found positive effects from Mercosur, insignificant effects from the Andean Pact, and negative effects from EC membership. Other studies have had seemingly implausible results; Frankel (1997) and Oguledo and MacPhee (1994) provide summaries of FTA coefficient estimates across studies. A decent review of the Gravity equation and FTA's effect on bilateral trade could be found in Kepaptsoglou et al. (2010).

Recent literature focuses on FTAs' endogeneity and their treatment in gravity equations. Namely, FTAs members are not chosen randomly: they are naturally biased towards the neighbors, as well towards economically 'similar' countries (Baier and Bergstrand, 2004). Hence, if FTA dummy is not treated as endogenous; biased and inconsistent results arise from the unobservable heterogeneity, simultaneity and/or omitted variables (Caporale et al. 2009; Baier and Bergstrand, 2007). Controlling for the endogeneity through using differentiated panel data, Baier and Bergstrand (2007), for instance, found that traditional estimates underestimated FTA effect on trade by 75-85%. Trefler (1993) systematically addressed the simultaneous determination of US multilateral imports and US multilateral nontariff barriers in a cross-industry analysis. He found that, after accounting for the endogeneity of trade policies, their effect on US imports increased tenfold. Lee and Swagel (1997) also showed that previous estimates of the impact of trade liberalization on imports had been considerably underestimated. In addition, Frankel (2010) argues that FTA's endogeneity might be more important for developing countries.

Despite the general proliferation of studies measuring FTA's trade impact, the academic interest in CEFTA has been fairly weak. Many of the studies are descriptive and narrative, with few exceptions: Christie (2003), Bussiere et al. (2005) and Petreski

(2013). Apparently, the first two were written at the time when CEFTA in today's composition did not exist, so that they compare the actual and potential trade in the Western Balkan countries. Both find that trade relations in the region were quite below the potential, which corroborates our Figure 1. Petreski (2013) measures the effect of CEFTA on trade in a standard gravity framework in the 1993-2010 period (with only 4 years of CEFTA existence) and finds positive and large effect of CEFTA, mainly driven by the disrupted trade flows in the early transition period.

4. Methodology and Data

4.1 Model

The standard Gravity model takes the following estimable form:

$$T_{ijt} = \alpha_i + \alpha_j + \delta_t + \beta_1 y_{it} + \beta_2 y_{jt} + \beta_3 d_{ij} + \beta_4 q_{ijt} + \beta_5 \sigma_{ijt} + \beta_6 linder_{ijt} + \beta_7 SSA_{ijt} + \beta_8 CEFTA_{ijt} + \beta_9 EU_{ijt} + \sum \gamma_k M_{ijkt} + u_{ijt} \; . \quad (1)$$

Whereby: T_{ijt} is the log of the real bilateral trade (the log of nominal export plus import deflated by the CPI index) between i and j at time t; y_{it} and y_{jt} are the logs of the real GDP in country i and country j, respectively, at time t; d_{ij} is the log of the distance between i and j; M_{ijkt} reflects the cultural, historical and political factors affecting trade between two countries. This vector includes the following three dummy variables: common language; common border; being a part of same state in the past. q_{ijt} is the real bilateral exchange rate between i and j (obtained as the log of the nominal exchange rate plus the log of foreign price level minus the log of the domestic price level). σ_{ijt} is the rolling standard deviation (three-year span) of the log bilateral nominal exchange rate. As argued earlier, the real bilateral exchange rate reflects competitiveness, while the standard deviation of the nominal rate reflects the uncertainty in the economy imposed by the exchange rate. $linder_{ijt}$ is the ratio of country i's to country j's GDPs per capita, to capture Linder's (1961) hypothesis that countries with similar demand patterns are likely to trade more.

SSA_{ijt} is a dummy variable taking a value of 1 for all pairs after country i signed the Stabilisation and Association Agreement with EU-member country. $CEFTA_{ijt}$ is a dummy variable that takes value of 1 if the pair (i,j) belongs to CEFTA. α_i and α_j represent country fixed effects capturing unobserved heterogeneity and the multilateral resistance effect (Anderson and van Wincoop, 2003). δ_t is the time-specific fixed effect which controls for global trends, crises and shocks, but also global changes in transportation and communication costs. u_{ijt} is an i.i.d error term which is assumed to be well-behaved.

4.2 Endogeneity and Instruments

The key question underlying this paper is if CEFTA is exogenous creation? We provide few arguments against this hypothesis. *First*, CEFTA is not immune to the standard argumentation for FTA's endogeneity: it has been formed by neighbouring countries (Moldova being the only exception), majority of which shared the same country in the past (Yugoslavia), speak distinct but mutually-understandable

languages, and their economies are similar either as a volume or in terms of their level of development. Hence, CEFTA emerged as a natural trading bloc for these countries. *Second,* dominant part of today's CEFTA (5 out of 7 countries) were once single state: Socialist Federal Republic of Yugoslavia, hence representing trade bloc, customs union, monetary union and a single market. Hence, in Yugoslavia, their mutual trade (being internal at that time) was large. After Yugoslavia dissolved, the trade among CEFTA members somehow halted or at best reduced; they went through decade of conflicts, wars, embargos and political and ethnic tension. They hence heavily needed a forum for discussion to overcome prejudices and start working together (again) for development objectives. CEFTA could be understood as an initial step toward such a goal. *Third,* despite these countries traded little among each other before CEFTA, they all have had close economic ties with the EU: EU is their main trading partner (see Figure 2), their financial systems are predominantly owned by EU-based bank groups, they receive large amounts of remittances in a large part originating from the EU countries and so on. CEFTA-members' citizens repeatedly and undoubtedly express their will in surveys (e.g. European Values Survey; Eurobarometer) to join the EU. Hence, orientation toward EU may have been additional *spiritus movens* of CEFTA creation: "…the prospect of the EU membership might have given a new impetus to these [trade, n.b.] dynamics." (Bussiere et al. 2005, p.11).

The first source of endogeneity – selection on observables - could be resolved by adding observables on income, shared language, shared border in the gravity equation (Barnow *et al.* 1980; Heckman and Hotz, 1989; and Moffitt, 1996), as well by inclusion of the country fixed effects (Micco *et al.* 2003; Cheng and Wall, 2005; Bussière *et al.* 2005). However, this will not capture endogeneity accruing from the other two sources – forming an FTA between neighbours which have not necessarily traded a lot in the past, but who share common unobserved factors correlating with both FTA creation and mutual trade. In econometric jargon, the error term u_{ijt} in (1) may be representing unobservable barriers which strive to reduce trade between two countries. Notable example includes such barriers due to ethnic and political tensions which have all been prevalent in the Balkans. Hence, the likelihood of the two-countries' governments selecting into an FTA may be high if there is a large expected welfare gain from potential trade creation if the FTA deepens liberalization beyond such barriers. Hence, the intensity of domestic political / democratic / interethnic climate and $CEFTA_{ijt}$ may be positively correlated, while the former and u_{ijt} may be negatively correlated. The later – selection on unobservables - will underestimate β_8.

The approach to endogeneity arising from the selection on unobservables falls under the "treatment effect" literature in econometrics. Consider equation (1) as a case in which we would like to measure the impact of the treatment variable ($CEFTA_{ijt}$) on the economic outcome of a continuous variable (log of bilateral trade). As we suspect in CEFTA's endogeneity due to unobservables, it follows that u_{ijt} is still different from zero as there are common unobservable factors that affect both the treatment and u_{ijt}. If there exists only a component of the vector of variables to determine the treatment, then it may be used as an instrumental variable to correct the endogeneity of $CEFTA_{ijt}$. The literature relies on several political variables as instruments to FTA in a gravity equation (Baier and Bergstrand, 2007). The main assumption is that such

variables approximating democracy, human rights, and government's accountability do not directly affect the bilateral trade *per se*, but may drive the creation of an FTA. We discuss these in two groups.

The first group of instrumental variables is that approximating democracy. Baier and Bergstrand (2007) discuss that the new evidence from political science suggests that FTAs are more likely to be formed when governments are more democratic. For example, Mansfield et al. (2002) develop a model which shows that the higher the democracy, the higher the perceived benefits by country's leaders from liberalizing trade transactions and entering an FTA. "Forming FTAs conveys positive information to voters about their leaders fostering international cooperation, which tends to increase their reelection probabilities." (Baier and Bergstrand, 2007, p.82). We use four indicators potentially correlated with citizens' democratic rights (Kaufmann et al. 2003): the extent of citizens' participation in the selection of government, their 'power' to peacefully select and replace government, the freedom of expression, and the level of civil liberties.

The second group of instrumental variables is that reflecting negotiation among governments. When the 'cost' of bilateral trade negotiation is low, there is higher propensity to form an FTA. Costs may be expressed as a regulatory burden or through government effectiveness in committing to policy's conduct. We use two indicators potentially correlated with government's negotiation will and power: the government effectiveness and commitments; and the regulatory quality and business/political-environment friendliness.

We argue that both democracy and government willingness to negotiate are not directly affecting trade, with the notion that these two are medium-term intangible concepts not affecting the daily decisions to trade. Certainly, arguments could be found against this notion; hence, we relax the assumption of strict exogeneity in Section 4.4.

4.3 Conditional Mixed Process Estimator

We start our analysis with the standard OLS method and then proceed with a class of IV methods. However, while such a method addresses the endogeneity bias due to FTA, it still relies on a first-stage linear model. In other words, the first-stage regression whereby $CEFTA_{ijt}$ is regressed on a set of included and excluded regressors (instruments) is estimated with an OLS, while it is clear that a binary probit model is required given $CEFTA_{ijt}$ takes values of 0 or 1.

Recently, Roodman (2011) proposed a general tool for estimating parameters in multi-equation, multi-level, referred to as conditional mixed-process systems, or CMP, allowing for a various types of regressions with an endogenous dummy regressor. The CMP method is a parametric one, meaning that distributional assumptions are imposed on the model which leads to higher efficiency. The standard IV approach, however, does not; there is an implied trade-off between both estimators. The CMP method is appropriate for two broad types of estimation situations: 1) those in which a truly recursive data-generating process is posited and fully modeled; and 2) those in which there is simultaneity but instruments allow the construction of a recursive set of equations, as in two-stage least squares (2SLS). In the first case, CMP is a full-information maximum likelihood (FIML) estimator, all estimated parameters

being structural. In the latter, it is a limited-information (LIML) estimator, and only the final stage's (or stages') parameters are structural, the rest being reduced-form.

According to Roodman (2011), within the CMP space is the Heckman selection model, where sample selection, represented by a dummy variable, is modeled in parallel with a dependent variable of interest: selection is modeled for the full dataset and the dependent variable for the subset with complete observations. Hence, in our case, we have a two-stage model, whereby the first stage is a probit regression of $CEFTA_{ijt}$ on all exogenous variables and the excluded instruments; while the second stage is an OLS regression of log bilateral trade on exogenous variables and prediction for $CEFTA_{ijt}$ from the first-stage regression.

The advantage of CMP – allowing for first-stage probit method is attenuated with its disadvantage of not providing any opportunity to conduct an over-identification test. Hence, the exogeneity of our instruments is solely based on our argumentation in section 4.2. This approach, however, has not been pursued in the analysis of FTAs' trade effect and presents a contribution to the current sparse of knowledge.

4.4 What If Instruments Are Not Strictly Exogenous?

A good instrument must satisfy two criteria: be correlated with the endogenous variable; and be uncorrelated with the shocks of the outcome equation. In our case, this implies that our instruments must be correlated with CEFTA, but uncorrelated with the shocks on trade, i.e. affect trade only through CEFTA and not directly. We have a technical limitation to calculate the Hansen statistics after CMP; however, even without that, one could convincingly argue that the democratic ambient or government effectiveness or regulatory burden could affect trade directly. Baier and Bergstrand (2007), since using standard IV, provide a p-value of the Hansen test of 0.000, hence failing to provide evidence that instruments are exogenous to trade.

We take another approach here, by utilizing the benefits of a recent method allowing for only plausible exogeneity of the instrument (Conley et al. 2012), by using prior information on the extent of deviations from the exact exclusion restriction. The contribution of Conley et al. (2012) provides a tool for drawing inferences about CEFTA when democracy, government effectiveness, civil liberties and the others are imperfect instruments. Hence, we relax the strong exogeneity assumption for our instruments and estimate the impact of CEFTA on trade with only plausibly exogenous instruments. The method consists of estimating a modified version of model (1) and estimating γ in the following equation:

$$T_{ijt} = \alpha_i + \alpha_j + \delta_t + \beta_1 y_{it} + \beta_2 y_{jt} + \beta_3 d_{ij} + \beta_4 q_{ijt} + \beta_5 \sigma_{ijt} + \beta_6 linder_{ijt} + \beta_7 SSA_{ijt} + \beta_8 CEFTA_{ijt} + \beta_9 EU_{ijt} + \theta Instrument_{ijt} + \sum \gamma_k M_{ijkt} + u_{ijt}, \quad (2)$$

where θ is a measure of the direct relationship of the instrument with trade. In (1), θ was assumed to equal zero, which could result in a biased estimate of β_8 in case of a direct relationship between the instrument and the dependent variable.

4.5 Data

Annual data over the period 1996-2015 are used in this paper. We opted for the sample to start in 1996 in order to avoid the period in the first half of 1990s, marked with trade disruptions mainly driven by wars and embargos. The dataset comprises 36 countries, among which all CEFTA members except Kosovo. The data for Kosovo are to a large extent unavailable. Countries were chosen based on their share in CEFTA-countries total trade. For illustration, the share of those countries in the trade of Macedonia in 2015 is 97%; in the trade of Bosnia is 94% (i.e. only 3% and 6%, respectively, of the total trade of those countries has been conducted with countries not included in our sample). This amounts to 24.500 potential observations and 1.225 bilateral trade relationships.

Data have been collected from the IMF: World Economic Outlook; Direction of Trade Statistics; and International Financial Statistics. The construction of the common language, shared state and shared former state variables followed common knowledge; details are available in the appendix. The instrumental variables are approximated with the following available data: i) the extent of citizens' participation in the selection of government is approximated by the 'Voice-and-Accountability' indicator; ii) citizens' 'power' to peacefully select and replace government by the 'Political-Stability' indicator; iii) government effectiveness and commitments by the "Government Effectiveness" indicators; iv) regulatory quality and business/political-environment friendliness by the "Regulatory Quality" indicator; all four derived from the World Governance Indicators database of the World Bank; v) the freedom of expression approximated the 'Freedom of Media Expression Index'; and vi) the level of civil liberties approximated by the 'Civil Liberties Index'; both obtained from Freedom House. All instruments are bound variables (range between 0 and 100, with the exception of Civil liberties, ranging between 1 and 7). Hence, we pursue logistic transformation to obtain unbound variables and reverse Freedom of Media Expression and Civil Liberties, so that all instruments suggest improvement when increase.

Detailed data descriptions, their sources, as well a set of basic descriptive statistics is provided in the appendix.

5. Results and Discussion

Table 1 presents the results of our equation (1). In column (1) we present the results of a simple OLS, while all the subsequent columns are based on the CMP estimator. We provide 5 pairs of estimates, each using different sets of instruments, while the last pair uses all instruments. In each pair, the first column presents the first-stage estimates whereby the probability that a pair belongs to CEFTA is regressed on the exogenous regressors and the instruments; while the second column presents the second-stage estimates whereby the log bilateral trade is regressed on the exogenous and endogenous regressors.

The results for the exogenous regressors are similar across OLS and CMP estimates. They suggest that incomes are positively associated to trade, so that trade between the two countries is determined by both pull and push factors. Higher distance deters trade, also reflected in the positive coefficients of the shared border and shared past state dummies. The Linder effect is in force: the more different the countries are in terms of the level of development, the less they trade. The EU acts as a strong trading bloc as it increased trade for more than 50%. Note that this table does not contain the

coefficients for the price variables: log RER and the volatility of the nominal exchange rate because we have data for only half of the observations. Hence, we add them but present the results in the appendix only. Table 3A in the appendix suggests that a real depreciation of the currency increases trade, while volatility, surprisingly increases trade, which is in line with Pugh and Tyrrall's (2000) low risk aversion argument to trade more when the rate is more volatile. Inter alia, results in Table 3A with halved sample serve as robustness test, as all other coefficients maintain their magnitudes and significances.

Before analyzing the results for the variable of interest – CEFTA, as well of the complementary variable SAA, we present the results of the first-stage equation. The first-stage results describe the probability that a country enters a FTA, in this case CEFTA. Results are quite appealing: countries which are physically closer, with shared border and which shared a common state in the past are more prone to form a FTA, which is in line with our argument for endogenous CEFTA. The more the countries are distant in terms of the level of development, the less inclined to join in an FTA.
The first stage equation also presents the results for the instruments. The results suggest that instruments identifying the gravity equation coefficients are "good," in the sense of having statistically significant effects in the estimated probit equation. In addition, they are all correctly signed. However, the remaining problem is that albeit these variables have been excluded from the typical gravity equation such as (1), they could be argued to affect trade directly. We revert to this problem in Section 5.2.

We now embark on discussing the variable of central interest – CEFTA. Results robustly suggest that CEFTA exhibited fairly large and statistically significant effect on members' trade. We should be cautious with the interpretation of the CEFTA coefficients' magnitudes, given they are in front of a dummy variable in a semi-log regression.

When CEFTA potential endogeneity is disregarded (column 1), results suggest that CEFTA increased trade by 73.8% compared to the period before and to the non-member trading partners. This is already a sizeable result. However, when endogeneity is accounted for (columns 3-11), then CEFTA is found to have exerted much stronger effect on members' trade, ranging between 117.7% and 127.3% compared to the period before and to the non-members. This result suggests that unobservables which potentially affected countries' decision to join in an FTA attenuate the true CEFTA effect for 59.4% to 72.4%, which has been also found in other instances in the literature (e.g. Baier and Bergstrand, 2007).

The effect of the Stabilization and Association Agreements has been found also positive and statistically significant: the SAA on average increased signatory-countries' trade by 13.8% compared to the period before and the countries without such agreement. As this coefficient is much lower than the coefficient on CEFTA, it provides evidence that CEFTA might have contributed against the creation of 'hub-and-spoke' structure between EU and CEFTA members.

While we consider the majority of trading partners of the CEFTA members, as is usual in the literature, we still recognize that the key results may be affected by the inclusion of countries that never belonged to CEFTA, nor they intend to do so. (Quite the contrary, we saw a wave of exiting CEFTA for joining the EU). To check for this possibility, in Table 2 we present the results for a sample reduced to CEFTA members

only. The key result – CEFTA – is positive and statistically significant and larger than the one in the baseline specification in Table 1: due to CEFTA, mutual trade is found to have increased by 3.2 to 5 times. Hence, the main finding is corroborated, despite the coefficient is revealing the role of CEFTA after its signature, only compared to the period before signing CEFTA, and not compared to both the period before and the other trading partners. However, the similarity of the coefficient, expectedly, suggests that the main benefit of CEFTA accrued in a temporal dimension and not with respect to countries outside the bloc.[3]

[3] We also investigate the temporality of the CEFTA effect on mutual trade. Table 4A in the appendix allows for a lagged effect of a year, on top of the contemporaneous effect. Results remain quite robust: they suggest that the main effect of CEFTA on mutual trade is contemporaneous, i.e. occurs within a year. The lagged CEFTA is not statistically significant.

Table 1 Baseline Results

	OLS	Conditional Mixed Process estimator										
		Democracy		*Effectiveness*		*Freedom of expression*		*Civil liberties*		*All instruments*	
	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Log GDP of country i	0.0496***	1.383***	0.0457***	1.247***	0.0459***	1.315***	0.0459***	1.317***	0.0454***	1.132***	0.0460***
	(0.008)	(0.357)	(0.008)	(0.381)	(0.008)	(0.330)	(0.008)	(0.350)	(0.008)	(0.405)	(0.008)
Log GDP of country j	0.0205***	1.277***	0.0175**	1.134***	0.0175**	1.168***	0.0177**	1.166***	0.0170**	0.979***	0.0176**
	(0.008)	(0.348)	(0.007)	(0.360)	(0.007)	(0.313)	(0.007)	(0.334)	(0.007)	(0.376)	(0.007)
Log distance	-1.164***	-0.536	-1.160***	-0.808*	-1.161***	-0.753*	-1.160***	-1.058**	-1.160***	-0.953**	-1.161***
	(0.017)	(0.440)	(0.015)	(0.431)	(0.015)	(0.448)	(0.015)	(0.426)	(0.015)	(0.462)	(0.015)
Common language	0.0197	-0.721	0.012	-0.811	0.0128	-0.952	0.0123	-1.651***	0.0117	-1.28	0.0132
	(0.032)	(0.678)	(0.037)	(0.676)	(0.037)	(0.580)	(0.037)	(0.549)	(0.037)	(0.946)	(0.037)
Shared border	0.390***	0.589	0.392***	0.312	0.393***	0.457	0.392***	0.365	0.392***	0.235	0.392***
	(0.025)	(0.395)	(0.024)	(0.389)	(0.024)	(0.402)	(0.024)	(0.346)	(0.024)	(0.415)	(0.024)
Shared common state in the past	2.064***	-0.017	2.057***	0.0864	2.061***	0.283	2.057***	0.509	2.056***	0.214	2.058***
	(0.056)	(0.637)	(0.050)	(0.626)	(0.049)	(0.527)	(0.050)	(0.517)	(0.050)	(0.886)	(0.050)
Relative GDP per capita	-0.119***	-0.846***	-0.117***	-0.831***	-0.118***	-0.947***	-0.117***	-0.898***	-0.117***	-0.926**	-0.118***
	(0.007)	(0.289)	(0.004)	(0.304)	(0.004)	(0.304)	(0.004)	(0.349)	(0.004)	(0.445)	(0.004)
European union (1 = the pair belongs to EU)	0.561***		0.562***		0.562***		0.561***		0.562***		0.562***
	(0.019)		(0.020)		(0.020)		(0.020)		(0.020)		(0.020)
Stabilization and Association Agreement (1= the pair trades under SAA)	0.118***		0.138***		0.134***		0.137***		0.140***		0.136***
	(0.028)		(0.026)		(0.026)		(0.026)		(0.026)		(0.026)
CEFTA (1 = the pair belongs to CEFTA)	0.553***		0.810***		0.783***		0.797***		0.821***		0.778***
	(0.088)		(0.062)		(0.061)		(0.062)		(0.061)		(0.060)
Voice and accountability index		1.892**								2.887*	
		(0.928)								(1.526)	
Political stability index		0.743*								0.0602***	
		(0.432)								(0.590)	
Government effectiveness index				3.138***						0.0979***	
				(0.955)						(1.216)	
Regulatory burden index				2.262**						2.593**	
				(1.154)						(1.189)	
Freedom of expression index						0.118				5.380**	
						(1.229)				(2.614)	
Civil liberties index								0.615***		0.785***	
								(0.105)		(0.155)	
Constant	19.87***	-5.692	19.96***	-3.584	19.97***	-59.65	19.96***	-55.58	19.98***	-1.338	19.96***
	(0.323)	(3.870)	(0.286)	(3.932)	(0.286)	0.000	(0.286)	0.000	(0.286)	(4.143)	(0.286)
Observations	23,033	23,023	23,023	23,033	23,033	23,026	23,026	23,017	23,017	23,016	23,016

Source: Author's calculations. *, ** and *** refer to a statistical significance at the 10, 5 and 1% level, respectively. Standard errors are given in parentheses. Country and time fixed effects are included but not presented due to space.

Table 2 Results with CEFTA Sample Only

	Conditional Mixed Process estimator											
	Voice and accountability index		*Political stability index*		*Government effectiveness index*		*Regulatory burden index*		*Freedom of expression index*		*Civil liberties index*	
	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade	P(CEFTA)	Log trade
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Log GDP of country i	1.160***	-0.181**	1.017***	-0.181**	0.864***	-0.206**	0.646**	-0.162*	1.138***	-0.201**	0.901***	-0.222**
	(0.271)	(0.089)	(0.265)	(0.089)	(0.230)	(0.090)	(0.297)	(0.086)	(0.250)	(0.091)	(0.292)	(0.090)
Log GDP of country J	-1.295***	0.192**	-1.107***	0.185**	-0.921***	0.219**	-0.642**	0.162*	-1.278***	0.209**	-0.973***	0.232**
	(0.286)	(0.090)	(0.278)	(0.090)	(0.242)	(0.091)	(0.315)	(0.087)	(0.263)	(0.093)	(0.307)	(0.090)
Log distance	-0.0566	-1.104***	-0.338	-1.169***	0.0911	-1.156***	0.554	-1.168***	-0.879	-1.127***	-0.49	-1.170***
	(0.519)	(0.383)	(0.718)	(0.385)	(0.560)	(0.386)	(0.757)	(0.373)	(0.631)	(0.392)	(0.617)	(0.386)
Common language	0.342	-0.800**	0.508	-0.779**	0.337	-0.770**	0.516	-0.811***	0.574	-0.788**	-2.128*	-0.856***
	(0.563)	(0.323)	(0.615)	(0.320)	(0.579)	(0.328)	(0.925)	(0.315)	(0.555)	(0.325)	(1.175)	(0.330)
Shared border	-0.273	1.328***	-0.527	1.234***	-0.177	1.248***	0.269	1.257***	-1.170*	1.275***	0.275	1.275***
	(0.483)	(0.364)	(0.702)	(0.366)	(0.523)	(0.366)	(0.729)	(0.354)	(0.611)	(0.372)	(0.773)	(0.365)
Shared common state in the past	0.13	3.158***	-0.349	3.137***	-0.137	3.171***	0.0869	3.177***	-0.503	3.178***	3.822	3.254***
	(0.586)	(0.335)	(0.601)	(0.332)	(0.610)	(0.340)	(1.034)	(0.327)	(0.566)	(0.338)	(3.892)	(0.342)
Relative GDP per capita	-1.24E-05	0.0894	-0.1	0.0855	0.0155	0.124	0.725*	0.078	-0.464**	0.114	0.0565	0.121
	(0.220)	(0.105)	(0.226)	(0.104)	(0.212)	(0.107)	(0.402)	(0.102)	(0.185)	(0.107)	(0.313)	(0.107)
CEFTA (1 = the pair belongs to CEFTA)		1.476***		1.302***		1.603***		1.174***		1.481***		1.571***
		(0.153)		(0.180)		(0.128)		(0.112)		(0.207)		(0.100)
Instrument used	5.280***		2.304***		4.155***		10.26***		2.482***		1.556***	
	(0.598)		(0.323)		(0.403)		(1.250)		(0.491)		(0.562)	
Constant	3.276	22.29***	5.07	22.88***	2.473	22.47***	-4.467	23.02***	8.283**	22.46***	10.13	22.67***
	(3.224)	(2.396)	(4.429)	(2.417)	(3.444)	(2.404)	(4.732)	(2.321)	(3.921)	(2.463)	0.000	(2.399)
Observations	518	518	482	482	488	488	488	488	496	496	442	442

Source: Author's calculations. *, ** and *** refer to a statistical significance at the 10, 5 and 1% level, respectively. Standard errors are given in parentheses. Country and time fixed effects are included but not presented due to space.

Table 3 Results of the Conley Procedure

Percentage of allowed direct influence, θ	***Instruments***					
	Voice and accountability	*Political stability*	*Government effectiveness*	*Regulatory burden*	*Freedom of media*	*Civil liberties*
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
			Index values			
0	100.00*	100.00*	100.00*	100.00*	100.00	100.00
1	99.27*	97.97*	99.06*	99.49*	98.52*	99.65*
2	98.53*	95.94*	98.13*	98.97*	97.04*	96.38*
3	97.80*	93.91*	97.19*	98.46*	95.56*	93.68*
4	97.06*	91.88*	96.25*	97.94*	94.08*	91.45*
5	96.33*	89.85*	95.32*	97.43*	92.60*	89.60*
6	95.60*	87.82*	94.38*	96.91*	91.13*	88.09*
7	94.86*	85.79*	93.44*	96.40*	89.65*	86.87*
8	94.13*	83.76*	92.51*	95.89*	88.17*	85.89*
9	93.40*	81.73*	91.57*	95.37*	86.69*	85.13*
10	92.66*	79.70*	90.63*	94.86*	85.21*	84.56*
11	91.93*	77.67	89.69*	94.34*	83.73*	84.17*
12	91.19*	75.64	88.76*	93.83*	82.25	83.93*
13	90.46*	73.61	87.82*	93.31*	80.77	83.83*
14	89.73*	71.58	86.88*	92.80*	79.29	83.87*
15	88.99*	69.55	85.95*	92.28*	77.81	84.03*
16	88.26*	67.52	85.01*	91.77*	76.33	84.30*
17	87.53*	65.49	84.07	91.26*	74.85	84.68*
18	86.79*	63.46	83.14	90.74*	73.38	85.16*
19	86.06*	61.43	82.20	90.23*	71.90	85.74*
20	85.32*	59.40	81.26	89.71*	70.42	86.40*

Source: Authors' calculation. * signifies statistical significance of the coefficient at the 5%-age level.

Next, we turn to discussing the results when allowing only plausibly exogenous instruments (Table 3). Before looking at them, we should note that due to technical limitations, we keep the reduced sample to CEFTA members only (i.e. we have in the model only their intra-trade). Second, Conley et al. (2012) assumes continued endogenous variable, as in standard IV. Third, only one instrument at a time could be used. Therefore, the magnitude of the obtained coefficients is not comparable to that in Table 1 (further than that in Table 2). Hence, we do not present the coefficient's magnitude (which, for zero allowed direct influence ranges between 0.9 and 3.3 for various instruments used, much higher than that in both Tables 1 and 2) but calculate an index value whereby the index=100 for zero assumed direct influence (row 1). We provide estimates for an arbitrary-determined span of direct influence of between 0% and 20%.

The estimated CEFTA coefficients for any instrument used decline as the direct influence between the instrument and trade increases. Hence, if we have a reasonable doubt in instruments' strict exogeneity with respect to trade, then we should consider that the CEFTA effect for trade reduces with the increase of the direct influence, to the magnitude of between 79.7% and 89.7% of its value under the strict exogeneity assumption. For some cases, the effect even vanishes after 11% of allowed direct influence. This makes sense, since if the instrument (e.g. democratic level, or regulatory burden) improves and hence likely positively affects trade directly, the coefficient on CEFTA will be amplified had such direct influence between the exogenous-assumed instrument and trade not been accounted for.

The main conclusion from this exercise is that while we found CEFTA effect for trade to have increased when CEFTA's endogeneity is accounted for, instruments' strict exogeneity must be proven. In case the instrument is only plausibly exogenous, then it is likely the correlation between the instrument and trade's idiosyncratic shocks that drives the result and not CEFTA itself, at least partially. However, given the limits of the Conley et al. (2012) in its present form, the conclusion should be approached with caution.

6. Conclusion and Policy Lessons

The idea to have CEFTA in today's composition can be now appreciated. Results suggest that CEFTA played quantitatively large and statistically significant role for its members. Under CEFTA, members increased their trade on average by 74%. When endogeneity is considered, the effect of CEFTA trade further intensifies: trade is estimated to have more than doubled. This result suggests that unobservables which potentially affected countries' decision to join in an FTA attenuate the true CEFTA effect for sizeable 60% to 72%, which has been also found in the earlier FTA literature. This may indirectly suggest that CEFTA trading power has been drawn not only from countries' GDPs and proximity, but also from their governments' will to establish level playing field for overcoming the hurdles and misunderstandings of the 1990s, for the purpose of cooperation and approximating EU standards sooner. Still this conclusion is valid only if instrument(s) could be argued or proven to be strictly exogenous to trade. If the researcher has a reasonable doubt in instrument's strict exogeneity, then the effect of CEFTA on trade is found to decline with growing allowed direct influence between the instrument and trade, or even to potentially vanish.

The effect of the Stabilization and Association Agreements has been found smaller than that of CEFTA, giving some support to the notion that CEFTA might have contributed to oppose the growing dependence of its members on EU trade.

The success of CEFTA brings an important lesson for the Western Balkan countries. It suggests that if they want to work together with a big leitmotiv – joining the European family – they can achieve a lot. On this road, increasing the further cooperation – reducing the non-tariff barriers to trade, coordination in the process of attraction of foreign direct investment, harmonizing the rules for public procurement and so on, will likely bring significant benefits to the region and will further boost its integration into the EU and the world economy, in general.

APPENDIX

Data issues

Countries included:

Austria, Albania, Belgium, Bosnia and Herzegovina, Bulgaria, China, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Macedonia, Moldova, Montenegro, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Slovenia, Serbia, Switzerland, Sweden, Spain, Turkey, Ukraine, UK, US.

Country aggregates:

CEFTA: Croatia (2003-2013) Albania, Bosnia and Herzegovina, Macedonia, Moldova, Montenegro and Serbia (all 2007).
EU: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Sweden, Spain, UK (all 1993-2015), Bulgaria, Czech public, Hungary, Poland, Romania, Slovakia, Slovenia (2004-2015), Croatia (2013-2015)

Common language:

Serbo-Croatian and Macedonian (Bosnia, Croatia, Macedonia, Montenegro, Slovenia, Kosovo); Albanian (Albania, Kosovo, Macedonia); English (UK and US); French (Belgium, France, Luxembourg, Switzerland); German (Austria, Germany, Luxembourg, Switzerland); Dutch (Belgium, Netherlands); Swedish (Sweden, Finland); Russian (Russia, Moldova, Ukraine). Common state in the past: Yugoslavia (Macedonia, Kosovo, Serbia, Croatia, Bosnia, Montenegro, Slovenia); USSR (Russia, Ukraine, Moldova); Czechoslovakia (Czech; Slovakia).

Table A1 Variable Definitions and Sources

Variable	Definition	Source
Log real bilateral trade	The log of nominal export plus import deflated by the CPI index	Direction of Trade Statistics
Log GDP of country i	Log real GDP of country i	World Economic Outlook
Log GDP of country j	Log real GDP of country j	World Economic Outlook
Log distance	Distance measured in km, as the physical distance between countries' capitals, and then logged	http://www.distancefromto.net
Common language	See the definition above	See the construction above.
Common border	1 if countries share a border	Google maps
Shared common state in the past	1 if countries belonged to a common state in the past	Common knowledge
Log real exchange rate	Log of the nominal exchange rate of the currencies of country i and j, deflated by the CPI differential	International Financial Statistics
Nominal exchange rate volatility	Three-period rolling standard deviation of the log of the nominal exchange rate of the currencies of countries i and j	International Financial Statistics
Relative GDP per capita	The ratio of the GDPs per capita of county i and j	World Economic Outlook
European union	1 = the pair belongs to EU	https://europa.eu/european-union/index_en
Stabilization and Association Agreement	1= the pair trades under SAA	https://ec.europa.eu/neighbourhood-enlargement/policy/glossary/terms/saa_en
CEFTA	1 = the pair belongs to CEFTA	http://cefta.int/
Voice and accountability index	Reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Logistic function of the sum of the percentile ranks for the two partner countries.	World Governance Indicators
Political stability index	Measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. Logistic function of the sum of the percentile ranks for the two partner countries.	World Governance Indicators
Government effectiveness index	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Logistic function of the sum of the percentile ranks for the two partner countries.	World Governance Indicators
Regulatory burden index	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Logistic function of the sum of the percentile ranks for the two partner countries.	World Governance Indicators
Freedom of expression	Measures the degree of print, broadcast, and digital media freedom. Logistic function of the sum of the percentile ranks for the two partner countries.	Freedom House
Civil liberties index	Measures civil liberties. Logistic function of the sum of the index (ranging from 1 to 7) for the two partner countries.	Freedom House

Table A2 Descriptive Statistics of the Variables Included

Variable	*Obs*	*Mean*	*Std.Dev*	*Min*	*Max*
Log GDP of country i	27,530	21.65	9.03	4.59	30.36
Log GDP of country j	27,433	21.65	9.03	4.59	30.36
Log distance	28,520	7.24	0.88	4.77	9.36
Common language	28,543	0.05	0.22	0	1
Common border	28,543	0.11	0.31	0	1
Shared common state in the past	28,543	0.03	0.17	0	1
Log real exchange rate	12,528	0.00	2.72	(7.99)	7.99
Nominal exchange rate volatility	12,082	2.80	2.02	0	13.60
Relative GDP per capita	26,471	1.79	2.48	0.02	44.43
European union (1 = the pair belongs to EU)	28,543	0.27	0.44	0	1
Stabilization and Association Agreement (1= the pair trades under SAA)	28,543	0.10	0.29	0	1
CEFTA (1 = the pair belongs to CEFTA)	28,543	0.01	0.11	0	1
Voice and accountability index	23,358	1.18	1.06	(2.01)	7.20
Political stability index	22,968	0.68	0.98	(2.57)	6.03
Government effectiveness index	23,033	1.17	1.04	(1.78)	6.28
Regulatory burden index	23,035	1.24	0.94	(1.35)	4.94
Freedom of expression	24,781	0.78	0.73	(2.14)	2.44
Civil liberties index	20,782	(0.02)	0.85	(1.79)	0.92

Table A3 Results with Price Variables Included

	OLS	Conditional Mixed Process estimator									
		Democracy		Effectiveness		Freedom of expression		Civil liberties		All instruments	
	Log trade	CEFTA	Log trade	CEFTA	Log trade	CEFTA	Log trade	CEFTA	Log trade	CEFTA	Log trade
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Log GDP of country i	0.0755***	1.280***	0.0658***	1.177***	0.0660***	1.428***	0.0660***	1.251***	0.0648***	1.038***	0.0663***
	(0.014)	(0.362)	(0.013)	(0.391)	(0.013)	(0.363)	(0.013)	(0.345)	(0.013)	(0.361)	(0.013)
Log GDP of country J	-0.00111	1.191***	-0.00832	1.091***	-0.00892	1.299***	-0.00821	1.114***	-0.00966	0.996***	-0.0084
	(0.014)	(0.358)	(0.013)	(0.374)	(0.013)	(0.347)	(0.013)	(0.333)	(0.013)	(0.352)	(0.013)
Log distance	-1.066***	-0.607	-1.056***	-1.047**	-1.058***	-0.715	-1.057***	-1.102**	-1.056***	-0.940**	-1.057***
	(0.027)	(0.448)	(0.023)	(0.433)	(0.023)	(0.458)	(0.023)	(0.431)	(0.023)	(0.450)	(0.023)
Common language	0.270***	-0.288	0.237***	-0.723	0.240***	-0.459	0.238***	-1.118	0.237***	-0.735	0.241***
	(0.072)	(0.829)	(0.067)	(0.810)	(0.067)	(0.752)	(0.067)	(0.935)	(0.067)	(1.282)	(0.067)
Shared border	0.627***	0.435	0.630***	0.00445	0.631***	0.42	0.630***	0.14	0.630***	-0.065	0.630***
	(0.037)	(0.396)	(0.036)	(0.372)	(0.036)	(0.398)	(0.036)	(0.334)	(0.036)	(0.382)	(0.036)
Shared common state in the past	1.528***	-0.221	1.527***	0.244	1.531***	0.0321	1.527***	0.286	1.525***	-0.0774	1.525***
	(0.076)	(0.797)	(0.069)	(0.784)	(0.069)	(0.728)	(0.069)	(0.890)	(0.069)	(1.210)	(0.069)
Log real exchange rate	0.813***	-0.648	0.816***	-0.395	0.816***	-0.505	0.816***	-0.801	0.815***	-0.659	0.815***
	(0.057)	(0.844)	(0.049)	(0.925)	(0.049)	(0.832)	(0.049)	(0.889)	(0.049)	(1.006)	(0.049)
Nominal exchange rate volatility	0.0372***	0.111	0.0354***	0.0741	0.0358***	0.133	0.0355***	0.0936	0.0355***	0.0609	0.0357***
	(0.006)	(0.098)	(0.005)	(0.105)	(0.005)	(0.101)	(0.005)	(0.117)	(0.005)	(0.132)	(0.005)
Relative GDP per capita	-0.133***	-0.829***	-0.129***	-0.777***	-0.129***	-0.938***	-0.129***	-0.892***	-0.129***	-0.745*	-0.129***
	(0.013)	(0.276)	(0.009)	(0.280)	(0.009)	(0.292)	(0.009)	(0.332)	(0.009)	(0.390)	(0.009)
European union (1 = the pair belongs to EU)	0.712***		0.719***		0.718***		0.719***		0.720***		0.719***
	(0.030)		(0.034)		(0.034)		(0.034)		(0.034)		(0.034)
Stabilization and association agreement (1= the pair trades under SAA)	0.137***		0.173***		0.167***		0.171***		0.175***		0.172***
	(0.038)		(0.039)		(0.039)		(0.039)		(0.039)		(0.039)
CEFTA (1 = the pair belongs to CEFTA)	0.400***		0.720***		0.694***		0.709***		0.733***		0.693***
	(0.092)		(0.070)		(0.068)		(0.070)		(0.068)		(0.068)
Voice and accountability index		1.778**								1.354	
		(0.886)								(1.526)	
Political stability index		1.431***								0.0602***	
		(0.526)								(0.635)	
Government effectiveness index				3.131***						0.0979***	
				(0.912)						(1.078)	
Regulatory burden index				3.452***						3.471***	
				(1.202)						(1.241)	
Freedom of expression index						0.538				-1.928	
						(1.202)				(2.317)	
Civil liberties index								0.612***		0.559***	
								(0.215)		(0.277)	
Constant	18.61***	-5.241	20.54***	-2.603	20.56***	-5.241	20.54***	-0.351	20.54***	-2.089	20.55***
	(0.551)	(4.077)	(0.179)	(4.171)	(0.179)	(4.103)	(0.179)	(4.022)	(0.179)	(4.370)	(0.179)
Observations	9,520	9,539	9,539	9,549	9,549	9,539	9,539	9,536	9,536	9,536	9,536

Source: Author's calculations. *, ** and *** refer to a statistical significance at the 10, 5 and 1% level, respectively. Standard errors are given in parentheses. Country and time fixed effects are included but not presented due to space.

Table A4 Results with Reduced Sample and Lagged CEFTA

	Conditional Mixed Process estimator											
	Voice and accountability index		Political stability index		Government effectiveness index		Regulatory burden index		Freedom of expression index		Civil liberties index	
	P(CEFTA)	*Log trade*	*P(CEFTA)*	*Log trade*	*P(CEFTA)*	*Log trade*	*P(CEFTA)*	*Log trade*	*P(CEFTA)*	*Log trade*	*P(CEFTA)*	*Log trade*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Log GDP of country i	1.161***	-0.174**	1.019***	-0.174**	0.861***	-0.206**	0.643**	-0.159*	1.129***	-0.196**	0.896***	-0.216**
	(0.270)	(0.089)	(0.264)	(0.089)	(0.229)	(0.090)	(0.297)	(0.086)	(0.249)	(0.091)	(0.292)	(0.089)
Log GDP of country J	-1.296***	0.189**	-1.110***	0.182**	-0.918***	0.218**	-0.639**	0.159*	-1.269***	0.209**	-0.969***	0.228**
	(0.285)	(0.089)	(0.277)	(0.090)	(0.241)	(0.091)	(0.314)	(0.087)	(0.261)	(0.093)	(0.306)	(0.090)
Log distance	-0.035	-1.125***	-0.323	-1.195***	0.11	-1.189***	0.579	-1.203***	-0.874	-1.155***	-0.461	-1.199***
	(0.518)	(0.383)	(0.717)	(0.385)	(0.560)	(0.387)	(0.758)	(0.373)	(0.632)	(0.392)	(0.614)	(0.385)
Common language	0.388	-0.863***	0.541	-0.840***	0.383	-0.834**	0.569	-0.872***	0.628	-0.852***	-1.998*	-0.920***
	(0.564)	(0.323)	(0.616)	(0.320)	(0.579)	(0.330)	(0.926)	(0.315)	(0.555)	(0.326)	(1.172)	(0.330)
Shared border	-0.258	1.314***	-0.517	1.213***	-0.16	1.223***	0.29	1.229***	-1.176*	1.256***	0.266	1.252***
	(0.483)	(0.363)	(0.702)	(0.365)	(0.522)	(0.366)	(0.730)	(0.353)	(0.611)	(0.372)	(0.770)	(0.364)
Shared common state in the past	0.0982	3.228***	-0.376	3.205***	-0.189	3.239***	0.031	3.243***	-0.534	3.254***	3.761	3.323***
	(0.586)	(0.335)	(0.601)	(0.332)	(0.611)	(0.341)	(1.034)	(0.327)	(0.566)	(0.338)	(3.876)	(0.342)
Relative GDP per capita	0.0233	0.069	-0.0864	0.0634	0.0331	0.0966	0.749*	0.0488	-0.458**	0.0895	0.104	0.0971
	(0.220)	(0.107)	(0.226)	(0.106)	(0.212)	(0.109)	(0.403)	(0.104)	(0.185)	(0.108)	(0.309)	(0.108)
CEFTA (1 = the pair belongs to CEFTA)		1.290***		1.132***		1.666***		1.184***		1.327***		1.463***
		(0.193)		(0.219)		(0.183)		(0.166)		(0.235)		(0.138)
CEFTA lagged for a year		0.278		0.251		-0.0724		-0.00725		0.255		0.157
		(0.169)		(0.176)		(0.160)		(0.163)		(0.174)		(0.134)
Instrument used	5.305***		2.307***		4.185***		10.26***		2.535***		1.547***	
	(0.598)		(0.324)		(0.408)		(1.249)		(0.498)		(0.564)	
Constant	3.132	22.33***	4.97	22.97***	2.335	22.72***	-4.649	23.26***	8.235**	22.54***	9.922	22.82***
	(3.223)	(2.395)	(4.427)	(2.415)	(3.442)	(2.410)	(4.736)	(2.322)	(3.922)	(2.461)	0.000	(2.396)
Observations	515	515	479	479	485	485	485	485	494	494	439	439

Source: Author's calculations. *, ** and *** refer to a statistical significance at the 10, 5 and 1% level, respectively. Standard errors are given in parentheses. Country and time fixed effects are included but not presented due to space.

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