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Eurasian Economic Integration:

Impact Evaluation Using the Gravity Model and the Synthetic Control Methods

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Abstract

The study examines the impact of Eurasian economic integration at aggregate and industry levels using the gravity model of trade and the synthetic control methods. The analysis finds that the trade creation effect associated with the establishment of the Eurasian Customs Union in 2010 and its further deepening, while initially exhibiting high significance, largely dissipated towards the year 2015. Overall, the net impact was overwhelmingly positive for Belarus, generally positive for Russia and mixed for Kazakhstan. Most gains are attributed to the exports of commodities (mineral products and metals), agri-food sector, and, notably, machinery and transportation sectors. The inception of the Eurasian bloc was also associated with trade diversion effects, consistent with the expectations for trade-diverting customs unions, yet the impact on imports from some countries and sectors outside the bloc, on the contrary, was positive.

Keywords: Eurasian integration, economic integration, trade policy impact, synthetic counterfactual method, gravity model of trade

JEL classification: F13; F14; F15

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1 Introduction

Eurasian economic integration remains the most successful attempt so far to reintegrate the economies of the post-Soviet space. While there were multiple efforts to facilitate economic integration throughout the 1990s and 2000s, consolidating efforts to form an arrangement extending beyond bilateral free trade or preferential trade agreements proved to be difficult. After years of negotiations, in 2010 Belarus, Kazakhstan and Russia managed to establish the Eurasian Customs Union (EACU), which two years later was upgraded to the Eurasian Customs Union – Single Economic Space (EACU-SES), offering free movement of goods, services, capital and labor for the member states in addition to customs union arrangements. Finally, in 2015 it was further transformed to the Eurasian Economic Union (EAEU) and expanded geographically as Armenia and Kyrgyzstan joined the bloc.

The EAEU Treaty is the principal document that sets the legal framework of the EAEU, including regulations concerning trade facilitation, technical standards, sanitary and phytosanitary (SPS) measures, consumer protection, coordination of selected economic policies.[1] The following key pillars now constitute the economic backbone of the EAEU:

- *Customs union:* shared customs territory with a common external tariff (EACU CET) levied upon imports from non-EAEU trading partners; harmonization of non-tariff measures and procedures; unified commodity classification and customs code[2].
- *"Four freedoms":* free movement of goods, services, labor and capital across the EAEU member states.
- *Economic policy coordination:* coordination of economic policies in selected areas, including macroeconomic policy[3], financial markets, taxes, competition and natural monopolies, energy, transport, public procurement, labor migration and other areas.

In addition, in 2012 a system of supranational institutions was established to manage the Eurasian integration. In particular, the Eurasian Economic Commission based in Moscow is a permanent supranational organization responsible for the broad oversight of the integration process with a range of regulatory competencies delegated to it from the national level, e.g. customs, SPS and technical regulations. The EAEU has ambitious plans to arrive at a common energy market and closer financial integration in the future (early plans stated 2025 as the target year). At the same time, despite fast progression from the EACU (2010) to the EACU-SES (2012) and the EAEU (2015) still multiple

[1] The English translation of the EAEU Treaty is available at the WTO website: https://www.wto.org/english/thewto_e/acc_e/kaz_e/WTACCKAZ85_LEG_1.pdf

[2] A new EAEU Customs Code entered into force in January 2018 replacing the customs code of the 2010 EACU, now offering greater efficiency in the transit of goods, in particular, via electronic customs declarations, shorter clearance time for customs procedures and simplified declaration forms.

[3] Among others, the regulations enforce macroeconomic sustainability criteria capping inflation rate, general government debt and deficit levels, akin to the Maastricht criteria.

issues remain even with regard to trade in goods as negotiated exclusions from regulations, issues with regulatory harmonization of technical and SPS standards, compliance with the existing regulations and other challenges constitute impediments to mutual trade.[4]

While years have lapsed already since the inception of Eurasian integration, there is still little awareness about the economic content of the Eurasian Economic Union and its predecessors, and most discussions in the academic and policy-making circles focus largely on geopolitical implications. In particular, the literature on the impact of Eurasian integration is rather scarce and empirical analysis of its effects has been lacking with a few exceptions.

At the dawn of Eurasian integration its economic potential has been often questioned and the bloc was rather viewed as a "paper tiger" molded to satisfy geopolitical ambitions of Russia (see, e.g. Wisniewska (2012); Dragneva and Wolczuk (2012) for additional discussion). In an ex-ante analysis based on CGE framework De Souza (2011) finds that the EACU will reduce the national income of its member states as the trade diversion will exceed the trade creation effect. Similarly, in World Bank (2012) CGE modeling for Kazakhstan suggests that participation in the EACU costs it about 0.2 per cent per year in real income losses. A few empirical studies (EBRD (2012), Isakova and Plekhanov (2012), Tarr (2016)) see Russia as a major beneficiary from the adoption of the EACU CET, which largely was based on its pre-EACU customs tariff structure. By contrast, the impact on Kazakhstan is reported to be negative on account of its more liberal trade regime prior to the EACU.

Generally, most studies are skeptical about the expected economic impact of the bloc and suggest that positive effects might be seen if extra effort is made to improve trade facilitation and reduce non-tariff barriers to trade (Carneiro (2013), EBRD (2012), Tarr (2016)). A similar conclusion is reached in two empirical studies commissioned by the Eurasian Development Bank and the Eurasian Economic Commission—based on surveys of enterprises (EDB (2015a)) and CGE simulations (EDB (2015b)) reporting high levels of NTBs in most sectors. Among the most important barriers are licensing and quotas on imports/exports, state control or monopoly control of imports or exports, state subsidies on production or exports, technical and SPS measures.

Whether these challenges will be successfully addressed critically depends on the political will to implement the reforms. In this respect, Blockmans et al. (2012) evaluate the capacity of the Eurasian bloc to trigger the necessary reforms by comparing it with the early stages of European integration along multiple relevant background factors. The study finds that the challenges for effectively administering the integration process are substantial and hence the future of Eurasian integration is highly uncertain. A range of recent descriptive studies and policy notes (Bogulavska (2015), Bond (2017), Dragneva and Wolczuk (2017), Ioffe (2014), Popescu (2014), Schenkkan (2015)) also point at sig-

[4] See also EDB (2015a, 2015b).

nificant challenges Eurasian integration has been facing in the recent years that make its outlook gloomy.

At the same time, a more rigorous *ex-post* econometric assessment of *de facto* effects of Eurasian integration to date is lacking and the present paper intends to fill this gap and contribute to the literature along the following dimensions. First, while not much time has elapsed since the formation of the 2015 EAEU for a robust estimation of its effects, the impact of its predecessors on trade should already fully manifest itself. I cast light on the impact of Eurasian integration to date by focusing on its trade creation and trade diversion effects[5] over the period 2010–2015, which have not been estimated yet in the literature. Second, the study uses a two-fold methodological approach based on the gravity model of trade and a synthetic counterfactual method for a more robust inference. While the gravity model has been a workhorse of trade policy analysis, so far very few studies used the synthetic control approach in the analysis of economic integration (e.g. Campos (2014), Hannan (2016)), and its application to the study of the effects of Eurasian integration is entirely novel. Finally, the analysis is carried out at an aggregate and sectoral levels, identifying heterogeneous impacts across countries and sectors relative to a counterfactual scenario, which may be of practical use for policymakers involved in Eurasian integration or trade policy analysis in general.

Based on the gravity model and the synthetic control estimations the paper finds that the overall net impact of Eurasian integration varies substantially across the member states, sectors and over time. The analysis finds statistically and economically significant evidence of trade creation associated with the early stages of Eurasian integration—establishment of the EACU (2010) and the EACU-SES (2012)—as the member countries traded above the levels expected based on their economic fundamentals and relative to the synthetic counterfactural no-integration scenario. However, the positive effect largely dissipates towards the year 2015. The impact on exports is overwhelmingly positive for Belarus, generally positive for Russia and mixed for Kazakhstan with some sectors benefiting from integration, while others losing or not affected.

Overall, most gains are related to the exports of commodities (mineral products and metals), agri-food sector, and machinery and transportation sectors. The latter is particularly noteworthy given the generally low competitiveness of advanced high value-added sectors of the EAEU countries.

As regards implications for imports from countries outside the bloc, estimation results point at trade diversion effects at least for some of the top trading partners, particularly in the case of Kazakhstan, consistent with the general expectations for trade-diverting

[5] Trade creation is the increase in trade among members of an integration bloc as a result of lower prices of traded goods after tariffs and non-tariff barriers have been reduced or eliminated; trade diversion refers to the shift of imports from a more efficient exporter outside the bloc to a less efficient exporter within the bloc as a result of higher tariff and non-tariff protection measures applied to non-bloc trading trading partners (see Viner (1950)).

customs unions. Trade diversion intensifies notably in the 2014–2015 period. At the same time, imports from some non-bloc countries and sectors exhibit, on the contrary, a positive impact induced by Eurasian integration.

The remainder of the paper is organized as follows. The next section briefly reviews the key relevant features of Eurasian integration. Section 3 presents the empirical strategy. Estimation results are discussed in Section 4. Section 5 concludes.

2 Eurasian economic integration: stylized facts

Belarus, Kazakhstan, and Russia formed a customs union in 2010 with the following arrangements implemented to facilitate intra-bloc trade: (i) free movement of goods on the territory of the member states; (ii) common customs territory for the member states; (iii) unified commodity classification; (iv) common external tariff applied to non-EACU trading partners; (v) harmonization of non-tariff measures. While the EACU formally started its operation in January 2010, these arrangements were implemented gradually. In particular, since January 2010 the EACU CET was adopted by the member states, albeit with some negotiated exemptions phasing out over time. Since July 2010 the common Customs Code was enforced. Since July 2011 the customs controls were moved from the internal borders between the member states to the external borders of the EACU.

The two key elements of trade-related regulations of the Eurasian bloc—import tariffs and non-tariff barriers (NTBs)—warrant further discussion. Under the customs union arrangement the member states of the bloc share a common customs territory with a common external import tariff (EACU CET) applied to non-bloc trading partners. The EACU CET was largely based on the Russian import tariff profile and evolved since 2010 in line with Russia's WTO commitments[6]. While this implies that the structure of the EACU CET (Figure 1) has been better suited to protect the Russian industry from foreign competition, the union's regulations allowed some flexibility for the member states to negotiate certain exemptions and transition periods for tariffs in selected sectors.[7] Yet, the implementation of the common tariff in 2010 affected the tariff schedules of the member states asymmetrically, particularly Kazakhstan characterized by a more liberal prior trade regime had to notably increase its average level of tariffs (see Figure 2). More specifically, 82% of tariff lines remained unchanged in the case of Russia with about 14%

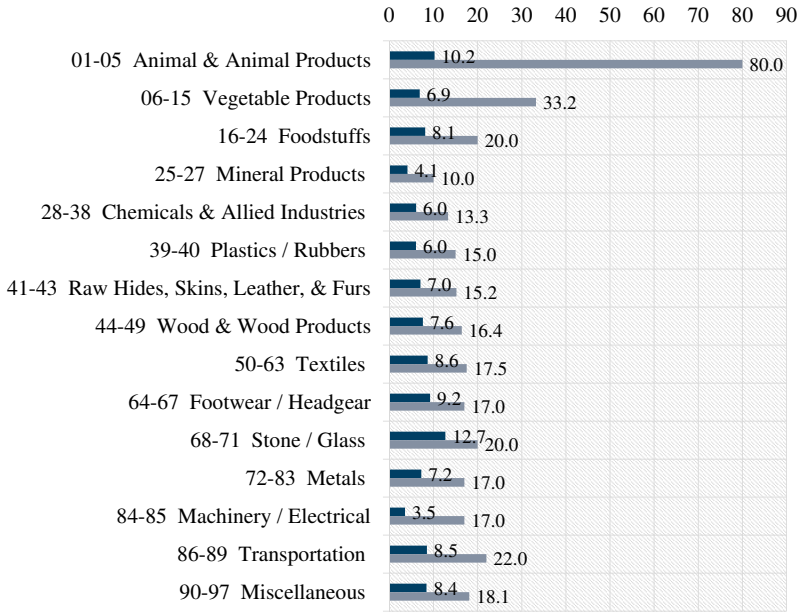
[6] Russia has been a member of WTO since August 2012; Armenia and Kyrgyzstan joined WTO in 1998 and 2003, respectively. Hence, after accession of Kazakhstan in November 2015, all EAEU countries are currently WTO members with the exception of Belarus. WTO obligations of each EAEU member differ significantly, and while the WTO obligations of Russia were transposed on the EAEU framework, conflicting WTO obligations of Kazakhstan were implemented as exclusions from the EAEU regulations, and Armenia and Kyrgyzstan had to conduct compensatory negotiations along the lines of the WTO upon entry to the EAEU in 2015.

[7] In addition, there are tariff rate quotas varying across the member states imposed on a narrow range of meat, poultry and certain types of whey imported from outside the bloc.

adjusted downwards and 4% adjusted upwards. Belarus retained over 70% of its tariff lines unchanged, while the rest were adjusted mostly downwards. By contrast, Kazakhstan had to increase tariff rates for about 45% of its product lines with 45% retained and 10% adjusted downwards. Implementation of a common tariff eliminated the need for customs controls between the EACU countries, which were gradually abolished and moved to the external borders of the bloc in 2011.

Figure 1: Common external tariff of the Eurasian Economic Union

Note: The figure shows average and maximum MFN rates by aggregate sectors (HS2-digit codes are listed next to sector names). Source: own calculations based on the WTO data for Russia, 2015.



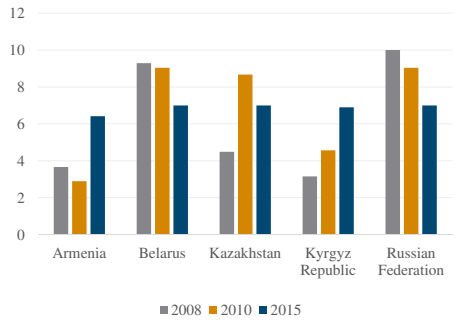
As for NTBs, the EAEU enforces its own technical standards for industrial production and sanitary and phytosanitary (SPS) measures for agriculture and food production. Exporters to the bloc now need to ensure their products meet the criteria to obtain the Eurasian Conformity Mark (EAC). The EAC common standards are gradually replacing national standards of the EAEU countries largely based on GOST standards, yet the process proved to be lengthy and difficult.

As import tariffs between the EACU members were already removed prior to the implementation of the customs union due to bilateral free trade arrangements, elimination of internal customs borders, harmonization of technical and SPS standards and other regulations were the key factors potentially boosting mutual trade. On the flipside, the combination of tariff and non-tariff measures of the EACU–EAEU provides a relatively high level of protection against imports from outside the bloc, which is particularly important for the EAEU countries as their sectoral competitiveness is largely

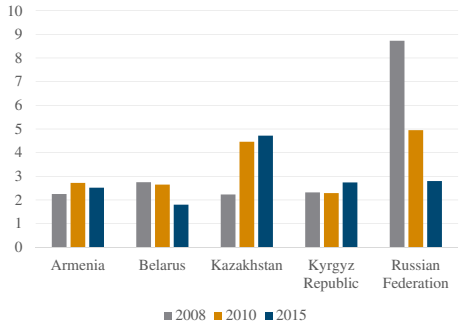
Figure 2: Change in average import tariffs, 2008–2015

Note: Panel (a) shows the simple average of the most favored nation rates across sectors, Panel (b) shows trade-weighted applied tariff rates. Source: World Bank's World Development Indicators.

(a) MFN rate, simple mean



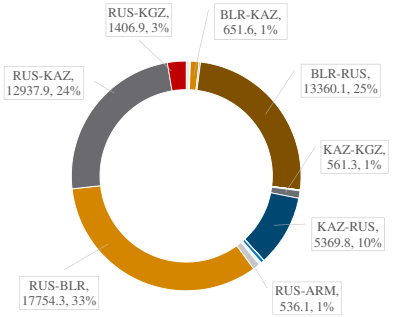
(b) Applied rate, weighted mean



concentrated in commodity sectors (petroleum and metals, gold in the case of Armenia and Kyrgyzstan) and agriculture (see Figure 4). By contrast, high value-added sectors are not competitive globally, although account for an important share in mutual trade (particularly, exports of machinery and transportation from Belarus and Kazakhstan to Russia). Thus, Eurasian integration is likely to be associated with both trade creation and trade diversion effects at least for some sectors and countries.

Figure 3: Intra-EAEU trade, 2010–2016 average

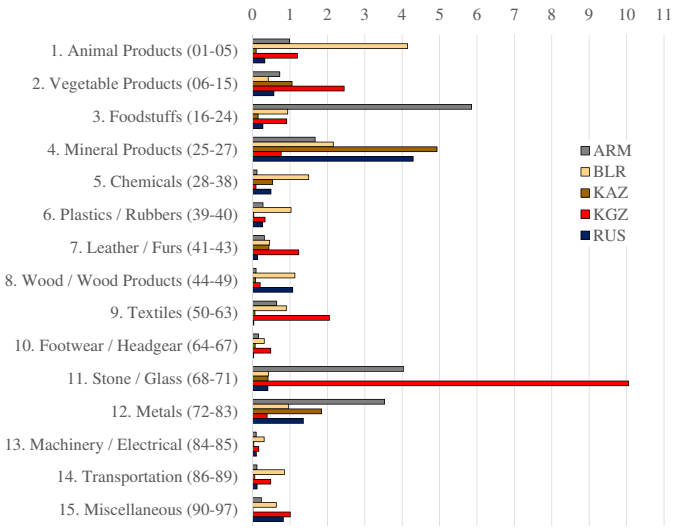
Note: The figure shows the shares (%) and nominal values (mn USD) of the EAEU countries (exporter-importer) in total intra-EAEU trade, averaged over the 2010-2016 period. Source: own calculations based on the UN Comtrade data.



Finally, it is important to note the general macroeconomic context of Eurasian integration. The bloc is characterized by huge economic asymmetries as Russia accounts for over 80% of the bloc's aggregate GDP and population, as well as dominates in terms of a large land mass spanning Europe and Asia, while most other members do not share a common border. These asymmetries are also reflected in the trade patterns as most of

Figure 4: Sectoral competitiveness of the EAEU countries

Note: The figure shows the RCA index (Balassa (1965)) computed for broad sectors (respective HS 2-digit industry codes are shown in parentheses) based on the 2000–2015 average trade. $RCA_{c,i} = \frac{X_{c,i}/\sum_i X_{c,i}}{\sum_c X_{c,i}/\sum_i \sum_c X_{c,i}}$, where $X_{c,i}$ is the value of exports for country c, industry i. $RCA_c, i > 1$ indicates a comparative advantage of country c in industry i. Source: own calculations based on the UN Comtrade data.



the intra-union trade takes place with Russia (see Figure 3. With Russia being an anchor economy of the bloc, it is also not surprising that developments in Russia have significant spillovers on the rest of the bloc. In particular, its recession in 2015–2016 on account of the global oil price stumbling, related currency devaluations, rising geopolitical tensions since 2014 along with sanctions against Russia and embargo imposed by Russia on a range of agri-food products from the EU, the US and other countries contributed to the collapse of intra-bloc trade in after 2014.

Earlier, the inception of the EACU in 2010 coincided with the global economic crisis reflecting negatively on the bloc with trade collapsing by about a third. This makes it also more difficult to quantify the contribution of the EACU implementation as opposed to the business cycle effects and post-crisis recovery of trade prompting a more sophisticated analysis. Therefore, to this end the study uses a two-fold approach using the gravity model of international trade and the synthetic counterfactual estimation that jointly should allow to elicit a more robust inference. While the former has been widely used in ex-post assessments of the impact of trade integration agreements, the latter is a novel method that could complement the empirical analysis, allowing to address certain limitations of the gravity model, e.g. measuring the impact of trade agreements via a

dummy variable and endogeneity of trade agreements.

3 Methodology and data

3.1 Gravity model of trade

The first step of the analysis employs the gravity model of trade—a workhorse of international trade analysis originally formulated in Tinbergen (1962) and later expanded and justified in a theoretical framework (see e.g. Bergstrand (1985, 1989), Anderson and van Wincoop (2003); for a detailed review of the approach, challenges and applications see WTO and UNCTAD (2012, 2017)). In line with the structural gravity model specification (Anderson and van Wincoop (2003)), bilateral trade X_{ijt} between countries i and j is explained by two major factors: the economic size component (level of hypothetical *"frictionless trade"*) and the trade cost component (wedge between the actual trade and the "frictionless" trade):

$$X_{ijt} = \frac{Y_{it}E_{jt}}{Y_t} \times \left(\frac{T_{ijt}}{\Pi_{it}P_{jt}}\right)^{1-\sigma} \tag{1}$$

where Y_t is the total world output in period t, Y_{it} is country i's domestic output, E_{jt} is country j's aggregate expenditure, T_{ijt} denotes bilateral trade costs, Π_{it} and P_{jt} denote outward and inward multilateral trade resistance terms, respectively (exporter's and importer's ease of market access), σ is the elasticity of substitution among goods from different countries. Rewriting the equation in a log-linear form and adding the vector Δ_{ijt} capturing the impact of Eurasian integration yields:

$$lnX_{ijt} = lnY_{it} + lnE_{jt} - lnY_t + (1-\sigma)lnT_{ijt} - (1-\sigma)lnP_{jt} - (1-\sigma)ln\Pi_{it} + \Delta_{ijt} + \epsilon_{ijt} \tag{2}$$

In the most basic formulation, the size of the trading economies is measured by their GDP values and trade barriers are proxied by the geographic distance between them. In empirical applications the model is further augmented by additional factors deemed to be relevant for explaining trade.

In line with the literature, I include the following variables in the estimated model to measure the size and trade cost elements:

- **Economic size:** GDP_{it} and GDP_{jt} for exporter's and importer's GDP (logarithm); *Year* fixed effects for common time-varying factors.
- **Bilateral trade costs:** $Distance_{ij}$ (logarithm of weighted distance between countries i and j based on the location of major cities); dummy variables $Language_{ij}$, $Border_{ij}$, $Colony_{ij}$, $Legal_{ij}$, $Currency_{ij}$, FTA_{ijt} for the existence of a common language, border, past colonial relationship, legal origin, currency, and a free trade agreement, respectively.

- **Multilateral trade resistance:** Remoteness of exporter and importer, computed as $Remoteness_{it} = \sum_j \frac{Distance_{ij}}{GDP_{jt}/GDP_{world,t}}$ and $Remoteness_{jt} = \sum_i \frac{Distance_{ij}}{GDP_{it}/GDP_{world,t}}$; $Landlocked_i$ and $Landlocked_j$ (= 1 if country $i(j)$ is landlocked, = 0 otherwise); alternative specifications include instead *Importer-year* and *Exporter-year* fixed effects.
- **Impact of Eurasian integration Δ_{ijt}:** $BothEACU_{ijt}$ (=1 if both countries are members of the EACU (2010), EACU-SES (2012) or EAEU (2015), 0 otherwise); $ImpEACU_{ijt}$ (=1 if importer is a EACU/EAEU member and exporter is not, 0 otherwise); $ExpEACU_{ijt}$ (=1 if exporter is a EACU/EAEU member and importer is not, 0 otherwise);
- ϵ_{ijt} — error term.

The trade creation effect of the EACU implementation is thus captured by $BothEACU_{ijt}$ and the trade diversion effects (from importer and exporter side) are picked up by $ImpEACU_{ijt}$ and $ExpEACU_{ijt}$ dummy variables. In addition, in order to allow for the phasing-in of the EACU regulations as described earlier, e.g the removal of intra-bloc customs borders in 2011 and provisions of the EACU-SES in 2012, alternative specifications also introduce fixed effects distinguishing between the post-2010 period and the post-2012 period. In order to pick up the effects associated with the trade regime existing before the EACU implementation alternative specifications include instead dummy variables for the EAEU countries (rather than membership)—$EAEU\_country\_both_{ij}$, $EAEU\_country\_imp_{ij}$, $EAEU\_country\_exp_{ij}$.

In addition to the specifications with the canonical gravity model variables, alternative specifications include only *Importer-year*, *Exporter-year* and/or *Exporter-importer* fixed effects (along with FTA and EACU membership variables), thereby dropping country-specific covariates and bilateral variables without time variation.

3.2 Synthetic counterfactual methodology

The synthetic counterfactual method developed in Abadie and Gardeazabal (2003) and Abadie et al. (2010, 2012) is used for further analysis at the aggregate and industry levels. In general, the method compares the actual outcome of a treated unit with a hypothesized counterfactual outcome under the assumption of no treatment. The counterfactual outcome is based on a synthetic unit constructed as a weighted average of pre-treatment outcomes and relevant characteristics of a comparable group of units ("donor pool") to closely mimic the pre-treatment dynamics of the treated unit.

Applying the language and logic of the synthetic counterfactual method to our context, a "unit" is an exporter-importer pair and "treatment" (or "intervention") is the inception of the EACU and its further deepening. The study focuses on the three founding members of the EACU—Belarus, Kazakhstan and Russia. The treated units in the analysis of

trade creation effects hence are the following exporter-importer units: BLR-KAZ, BLR-RUS, KAZ-BLR, KAZ-RUS, RUS-BLR, RUS-KAZ. The treated units in the analysis of trade diversion effects are exporter-importer pairs with either of the EACU countries as an importer and a non-EACU country as an exporter.[8] The synthetic counterfactual outcome constructed individually for each treated unit is thus the hypothetical post-intervention (post-2010) trade value that would have been observed for the treated units in the absence of treatment, i.e. implementation of the EACU arrangements.

In brief, the method is implemented as follows[9]. Given that the sample consists of $J+1$ units (trading pairs), suppose that the first unit ($i=1$) is exposed to treatment, while the rest ($i=2,\ldots,J+1$) are not, thereby constituting the donor pool to form a potential control group. Let Y_{it}^N denote the outcome (export value) that is observed (or would have been observed) for unit i in the absence of treatment for all $i \in [1, J+1]$ and period $t \in [1,T]$, which includes the post-intervention period $[T_0+1;T]$. Let Y_{it}^I denote the outcome for unit i at time t under treatment. By construction, $Y_{it}^N = Y_{it}^I$ for the pre-intervention period $t \in [1,T_0]$ for all $i \in [1,J+1]$. In the post-intervention period, the difference $\alpha_{it} = Y_{it}^I - Y_{it}^N$ is the impact of treatment on unit i at time t. Since only unit $i=1$ is subject to treatment in period $t > T_0$:

$$Y_{it}^I = Y_{it}^N + \alpha_{it} D_{it}, \text{ where } D_{it} = \begin{cases} 1 & \text{for } i=1, t > T_0 \\ 0 & \text{otherwise} \end{cases} \tag{3}$$

All outcomes are observed for all periods with the exception of Y_{1t}^N for $t > T_0$—the hypothetical outcome for the treated unit in the post-intervention period. Along the lines of the synthetic counterfactual technique, Y_{it}^N is assumed to be determined by the following factor model:

$$Y_{it}^N = \delta_t + \theta_{\mathbf{t}} \mathbf{Z_i} + \lambda_{\mathbf{t}} \mu_{\mathbf{i}} + \epsilon_{it} \tag{4}$$

where $\delta_{\mathbf{t}}$ is an unknown unobservable common factor, $\mathbf{Z_i}$ is a vector of observable variables, $\theta_{\mathbf{t}}$ is a vector of unknown parameters, $\lambda_{\mathbf{t}}$ is a vector of unobservable common factors, $\mu_{\mathbf{i}}$ is a vector of unknown factor loadings, ϵ_{it} is an i.i.d. error term. The idea is to find an optimal vector of weights $\mathbf{W} = (w_2, \ldots, w_{J+1})$, such that:

$$\begin{cases} Y_{1t} = \sum_{j=2}^{J+1} w_j Y_{jt} \\ Z_1 = \sum_{j=2}^{J+1} w_j Z_{jt} \end{cases} \tag{5}$$

[8] The members of the Commonwealth of Independent States Free Trade Area (CISFTA) are also dropped to avoid bias related to the impact of alternative trade agreements in progress in the same region and time period. The CISFTA came into force in 2011 replacing a "spaghetti bowl" of bilateral agreements that were in place since the 1990s.

[9] For details see Abadie and Gardeazabal (2003) and Abadie et al. (2010) and (2012).

After the optimal weight vector is estimated, the treatment effect is identified as:

$$\widehat{\alpha_{1t}} = Y_{1t}^{I} - \sum_{j=2}^{J+1} w_j Y_{jt} \text{ for } t > T_0 \tag{6}$$

The optimization condition in Equation 5 is overly restrictive and an optimal weight vector in practice is chosen to most closely satisfy the condition, which is achieved via the minimization of the pseudo-distance between the pre-treatment characteristics of the treated unit and the (potential) synthetic control group:

$$\left\| \mathbf{X_1} - \mathbf{X_0}\mathbf{W} \right\| \text{, s.t. } w_j \geq 0 \text{ and } \sum_{j=2}^{J+1} w_j = 1 \tag{7}$$

where $\mathbf{X_1}$ is the vector of pre-intervention characteristics of the treated unit and $\mathbf{X_0}$ is the matrix of the same pre-intervention characteristics of the control group. In other words, the weights are selected so that the outcomes and observed characteristics of the synthetic control unit replicate those of the treated unit as closely as possible in the pre-intervention period. A weighed average of the outcomes of the identified control units is then used to estimate the counterfactual outcome of the treated unit in the post-intervention period.

The gravity model of trade provides a natural reference framework to select the relevant covariates forming $\mathbf{Z_i}$.[10] Hence, in the optimization procedure in $\mathbf{X_1}$ and $\mathbf{X_0}$, in addition to the outcome variable (export values), conventional gravity-model variables are used as pre-intervention characteristics: GDP_i, GDP_j, $Distance_{ij}$, $Remoteness_i$, $Remoteness_j$, $Border_{ij}$, $Language_{ij}$, $Colony_{ij}$, $Currency_{ij}$, $Legal_{ij}$, $Landlocked_i$ and $Landlocked_j$.

In order to alleviate the possible interpolation bias, it is suggested in Abadie and Gardeazabal (2003) to limit the set of potential controls—the donor pool—to a subset of units that have similar characteristics to the treated unit. In light of significant heterogeneity of countries in the global sample it is difficult to find countries that are "structurally similar" to the EACU countries. However, given that the focus of the analysis is on bilateral trade, the global sample of countries could be constrained to a smaller donor pool of countries that belong to the same geographic region and are sufficiently similar to the treated unit under consideration from the perspective of the gravity model of trade. In particular, the donor pool is composed of the units satisfying the following criteria:

(1) Both countries in the unit belong to the Europe and Central Asia region.

(2) Pre-treatment period (2000–2009) average trade value is within one standard deviation from that of the treated unit.

(3) Pre-treatment average value of the ratio $\frac{\alpha GDP_i \times \beta GDP_j}{\gamma Distance_{ij}}$ is within one standard devi-

[10] A similar approach is undertaken in Hannan (2016).

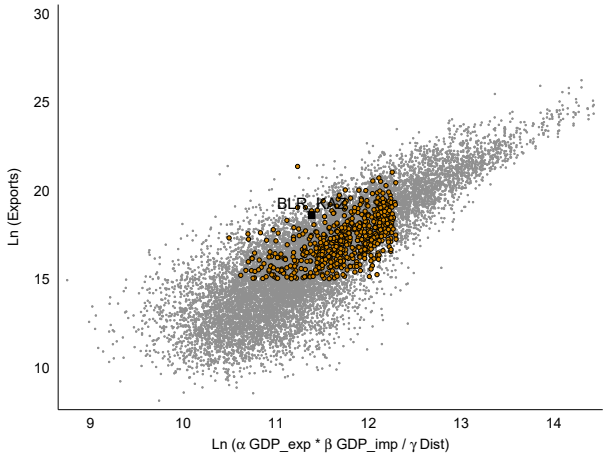
ations from that of the treated unit (α, β, γ are obtained from the previous gravity model estimations).

(4) Units in which either exporter or importer is a CISFTA or the EAEU country are excluded.

Thus, for each treated unit under analysis, its specific donor pool is limited to a subset of units in its neighborhood in the gravity-model sense (see Figure 5 for a sample donor pool). At the same time, the size of the donor pool in each case is sufficiently large to ensure unbiased results; for instance, in the case of the aggregate-level trade creation effect: BLR-KAZ (595 units in the donor pool), BLR-RUS (525 units), RUS-BLR (433 units), KAZ-BLR (688 units), KAZ-RUS (644 units), RUS-KAZ (560 units). The analysis then proceeds by running the optimization procedure and obtaining weights, constructing the synthetic unit and computing the estimated treatment effect ($\widehat{\alpha_{it}}$) on a case-by-case basis for the treated units.

Figure 5: Donor pool identification (BLR-KAZ example)

Note: The scatterplot shows exports (logarithm of average 2000–2009 value) plotted against the "gravity ratio" (summarizing the economic size and bilateral weighted distance, scaled by coefficients taken from the previously estimated gravity model and re-weighted). Gray dots indicate bilateral trade units (global sample), orange circles indicate the identified donor pool units, the black square indicates the treated unit.



3.3 Data

The analysis is based on a panel dataset spanning 188 countries over the period 2000–2015 at an annual frequency. The time period thus has a sufficient coverage before and after the inception of the EACU for an empirical analysis. The global dataset provides a rich basis to form a "donor" pool for the weight-selection procedure in the synthetic control estimation. The CEPII BACI database is used as a source of bilateral aggregate and industry-level trade data. GDP and bilateral variables, including common border, common language, distance, common legal origin and other variables are obtained from

the CEPII Gravity Database. The remoteness variables are computed based on the distance and GDP variables. The summary statistics are available in the Appendix Table 4.

4 Results

The section presents the results of the analysis, starting with the aggregate-level results based on the gravity model and the synthetic control estimations, followed by evidence from the industry-level analysis.

4.1 Aggregate analysis: trade creation and trade diversion

Evidence from the gravity model. For robustness, various versions of the gravity model of trade were estimated and selected results are reported in Table 1. In particular, the baseline specification (Column 1) shows the results based on the Heckman two-step sample selection model, allowing for zero trade observations.[11] The coefficient estimates for the variables that capture the effects of Eurasian economic integration point at a significant impact of the EACU implementation. More specifically, the trade creation effect associated with the EACU shows high statistical and economic significance across specifications, suggesting a strong positive impact beyond the average impact of free trade agreements as captured by the FTA_{ij} variable. The coefficient of the $BothEACU$ variable generally falling into the range of 0.8–1.5 across most specifications and models, signifies an increase in trade by some 120–350% beyond the level expected based on the gravity model determinants alone. At the same time, further deepening of Eurasian integration from the year 2012 onwards did not seem to bring notable additional stimulus to trade between the EACU countries (columns 2 and 6).

The presence of trade diversion is implied by the negative sign of the $ImpEACU$ (import diversion) and $ExpEACU$ (export diversion) coefficients. The magnitude of the trade diversion effect associated with the reduction of imports to the EACU from countries outside the union suggests a reduction by about 30%, while reduction of exports from the EACU to non-bloc countries is about 20%. As noted earlier, Belarus, Kazakhstan, and Russia before the formation of the customs union in 2010 enjoyed a free trade regime with a relatively high level of protection against other countries maintained via individual customs duties and NTBs, and in fact both trade creation and trade diversion effects

[11] The approach involves two steps: (i) a probit estimation defining whether two countries trade; (ii) estimation of expected trade values conditional on the two countries trading. I use common religion as an exclusion variable in this and other Heckman-type estimations. Besides the fact that the Heckman model addresses the issue of zero trade flows, it is a log-linear model (unlike PPML) involving continuous variables (as opposed to models where the variable space is spanned by country-year and pair fixed effects), which makes it better suited to the identification of covariates for the synthetic control estimation.

were present even before the establishment of the bloc. Nevertheless, the "added value" of the EACU remains significant after controlling for the pre-EACU trade regime and the implementation of the customs union regime appears to have further deepened the effect at least at its early stages.

Table 1: Gravity model estimation results

Note: The table shows selected estimation results using Heckman two-step sample selection model (Heckman), panel fixed effects (Panel FE) and Poisson pseudo-maximum likelihood estimation (PPML). Heckman and Panel FE are based on log-linear specifications; PPML is based on the gravity model in multiplicative form in levels (scaled). Standard errors clustered by exporter-importer pair in parenthesis. *** – statistically significant at the 1 percent level, ** – 2 percent level, * – 10 percent level.

	Heckman 1	**Heckman 2**	**Heckman 3**	**Panel FE 4**	**Panel FE 5**	**Panel FE 6**	**Panel FE 7**	**PPML 8**	**PPML 9**
GDP_{it}	1.145***	1.145***	1.144***	0.359***					46.605***
	(0.005)	(0.005)	(0.005)	(0.021)					(8.596)
GDP_{jt}	0.888***	0.888***	0.889***	0.658***					30.960***
	(0.005)	(0.005)	(0.005)	(0.019)					(8.578)
$Distance_{ij}$	-1.253***	-1.253***	-1.254***	-1.474***	-1.435***	-1.434***	-1.434***	-0.128***	-0.128***
	(0.018)	(0.018)	(0.018)	(0.017)	(0.016)	(0.016)	(0.016)	(0.002)	(0.002)
$Border_{ij}$	0.867***	0.867***	0.864***	0.771***	0.847***	0.852***	0.853***	0.668***	0.675***
	(0.086)	(0.086)	(0.086)	(0.085)	(0.081)	(0.081)	(0.081)	(0.019)	(0.018)
$Language_{ij}$	0.871***	0.871***	0.867***	0.649***	0.704***	0.704***	0.704***	0.030*	0.024
	(0.033)	(0.033)	(0.034)	(0.034)	(0.032)	(0.032)	(0.032)	(0.018)	(0.019)
$Colony_{ij}$	0.762***	0.762***	0.759***	0.826***	0.797***	0.805***	0.805***	0.153***	0.161***
	(0.079)	(0.079)	(0.079)	(0.081)	(0.079)	(0.079)	(0.079)	(0.023)	(0.026)
$Legal_{ij}$	0.009	0.009	0.011	0.196***	0.142***	0.142***	0.142***	0.228***	0.228***
	(0.024)	(0.024)	(0.024)	(0.022)	(0.022)	(0.022)	(0.022)	(0.011)	(0.012)
$Currency_{ij}$	0.550***	0.550***	0.549***	0.130	0.140*	0.139*	0.139*	0.181***	0.189***
	(0.086)	(0.086)	(0.086)	(0.089)	(0.084)	(0.084)	(0.084)	(0.021)	(0.022)
$Remoteness_{it}$	-2.033***	-2.033***	-2.031***	0.245*					0.002
	(0.075)	(0.075)	(0.075)	(0.132)					(0.002)
$Remoteness_{jt}$	-0.647***	-0.647***	-0.656***	-0.291**					0.006***
	(0.073)	(0.073)	(0.073)	(0.126)					(0.002)
$Landlocked_i$	-0.482***	-0.482***	-0.476***						
	(0.031)	(0.031)	(0.031)						
$Landlocked_j$	-0.431***	-0.431***	-0.434***						
	(0.032)	(0.032)	(0.032)						
FTA_{ij}	0.804***	0.804***		0.462***		0.460***	0.460***	0.564***	0.562***
	(0.033)	(0.033)		(0.031)		(0.031)	(0.031)	(0.018)	(0.018)
FTA_{ij} (excl. EAEU countries)			0.802***		0.458***				
			(0.033)		(0.031)				
$BothEACU_{ij}$ (t $\geq$ 2010)	0.946**	0.736		1.426***	0.759***	1.450***	2.070***	2.344***	1.468***
	(0.444)	(0.595)		(0.355)	(0.287)	(0.469)	(0.620)	(0.496)	(0.130)
$ImpEACU_{ij}$ (t $\geq$ 2010)	-0.413***	-0.414***		-0.026			0.691	0.349	0.148*
	(0.089)	(0.089)		(0.053)			(0.539)	(0.459)	(0.079)
$ExpEACU_{ij}$(t $\geq$ 2010)	-0.230**	-0.231**		-0.126**			-0.172	0.770***	0.175**
	(0.092)	(0.092)		(0.058)			(0.648)	(0.230)	(0.072)
$BothEACU_{ij}$ (t $\geq$ 2012)		0.330				0.286			
		(0.346)				(0.275)			
$EAEU\_country\_both_{ij}$			1.819***		1.670***				
			(0.486)		(0.412)				
$EAEU\_country\_imp_{ij}$			-0.430***						
			(0.092)						
$EAEU\_country\_exp_{ij}$			0.022						
			(0.085)						
Exporter FE				yes					yes
Importer FE				yes					yes
Year FE	yes	yes	yes	yes					yes
Exporter –Year FE					yes	yes	yes	yes	
Importer–Year FE					yes	yes	yes	yes	
N	515,656	515,656	515,656	349,107	398,976	398,976	398,976	702,670	527,208

Evidence from the synthetic control estimations. The analysis involves two distinct routines: estimation of the trade creation and the trade diversion effects as different treatment outcomes. In addition, a range of robustness tests for each case under consideration are performed.

Trade creation. While the gravity model of trade points at a notable aggregate impact on the EAEU countries, the synthetic counterfactual estimations indicate that the significance of Eurasian integration differs substantially across the member states (see Figure 6). On the one hand, one can observe a notable improvement in exports from Belarus both in the direction of Russia and Kazakhstan relative to the counterfactual no-integration scenario (also robust and statistically significant, judging by the RMSPE and placebo tests—see below). Exports from Russia to the rest of the bloc also increase over the period 2011–2012, albeit the net effect is less clear: in the case of RUS-KAZ trade fell beyond the predicted counterfactual levels in 2010 and 2015; in the case of RUS-BLR the pre-intervention fit of the synthetic control unit is lacking; placebo tests along with the adjusted RMSPE ratios also do not suggest robustness of the result. By contrast, exports from Kazakhstan to either of its EACU partners did not demonstrate robust positive impact being largely in line with the no-EACU counterfactual scenario or showing minor transitory gains.

Notably, the trade premium associated with Eurasian integration, $\widehat{\alpha_{1t}}$, in all cases quickly diminishes to insignificant levels over the period 2014–2015. This could be attributed to a range of factors related to the deteriorating macroeconomic conditions in the Eurasian bloc, including the impact of economic recession in Russia and negative spillovers to the rest of the bloc given its economic dominance, spiking exchange rate volatility and a cascade of devaluations as EACU currencies came under severe pressures during this period, the detrimental impact of sanctions/counter-sanctions imposed against/by Russia that further contributed to the deterioration of trade in general and intra-bloc trade in particular.[12]

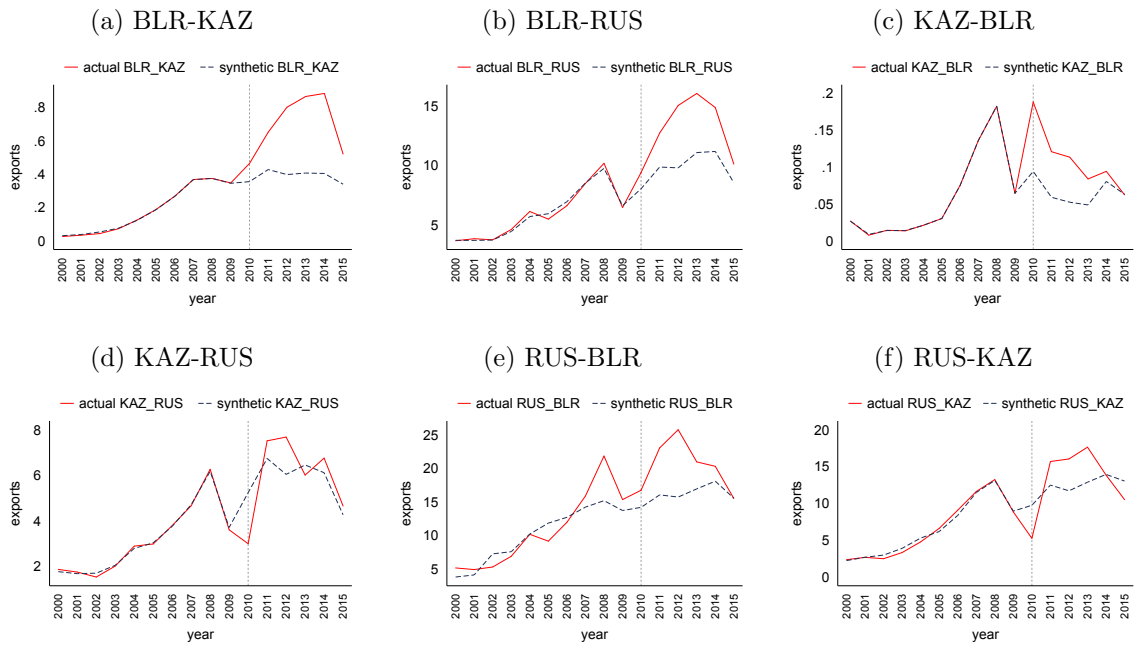
Trade diversion. Estimation of trade diversion effects is more complicated on account of a large number of trading partners outside the Eurasian bloc affected with potentially heterogeneous impacts of the EACU regulations on each. Therefore, in order to estimate the trade diversion effects firstly I identify top 30 exporters to each EACU country based on 2000–2009 average export values (dropping EAEU and CISFTA countries)—the list is reported in the Appendix Table 3. Then, each of the 30 exporter-importer pairs is used sequentially as a treated unit in synthetic control estimations.

Figure 7 reports the results of this exercise showing the difference between the actual and the synthetic counterfactual trade for each of the 30 units, as well as the sample average effect. No clear-cut uniform direction of change is observed: while a range of countries show robust signs of trade diversion, i.e. reduction of exports to the EACU

[12] The embargo on a range of agri-food products from the EU and the US was imposed by Russia unilaterally not receiving support from other members of the bloc, although the Eurasian bloc's regulations envision a common trade policy to be conducted at the supranational level. This has also led to certain tensions within the bloc, in particular, spot checks of products entering from Belarus by Russian customs authorities as it accused Belarus of attempting to smuggle in embargoed goods. These concerns also inhibited transit of goods from Belarus to Kazakhstan as Russia demanded additional checks at its borders to allow transit via its territory in 2014.

Figure 6: Synthetic counterfactual results, trade creation

Note: The figure shows actual and synthetic counterfactual exports in bn USD for a given exporter-importer unit. The vertical line denotes the treatment year (EACU implementation).

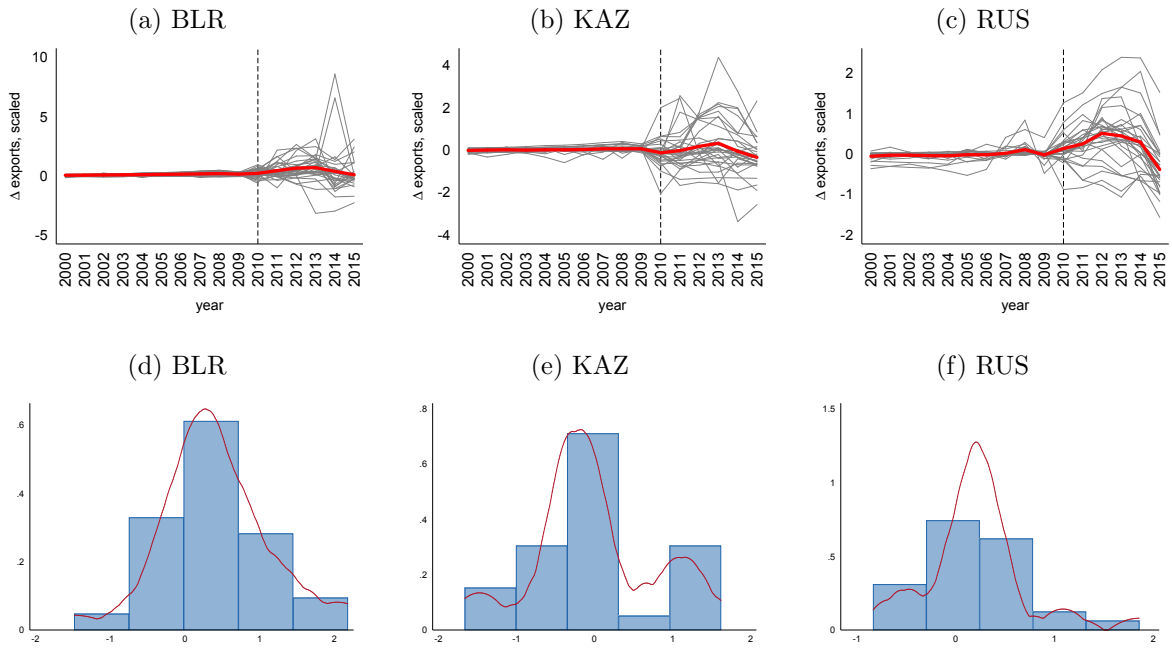


countries relative to the counterfactual, other countries, on the contrary, exhibit an improvement in trade. Geographic proximity and the scale of trade do not explain these differences. While the negative impact on imports from countries outside the bloc is consistent with the general expectations for trade-diverting customs unions, the positive impact could be the result of *de facto* improvements in multilateral trade restrictiveness of the EAEU countries as a result of Eurasian arrangements at least for some trading partners: (i) the EACU and its successors induced a reduction in the level of import tariffs of Belarus and Russia, which had a slightly more restrictive trade regime prior to 2010; (ii) the Eurasian bloc facilitates harmonization of technical and SPS regulations and adoption of new EAC standards, thereby stimulating faster transition in the direction of international standards (as opposed to earlier GOST-based standards); (iii) the WTO obligations of Russia are transcribed to the regulations of the union further facilitating its overall trade liberalization.

Summarizing the average effect across countries, a slightly higher tendency towards trade diversion manifests in the case of exporters to Kazakhstan, particularly during the period of adoption of the EACU CET and in 2014–2015. In general, one can see a clear sign of the trade diversion effect intensifying following the year 2014 in all countries and especially in Russia, which is likely the result of the joint impact of recession and sanctions, as discussed earlier.

Figure 7: Synthetic counterfactual results, trade diversion

Note: The figure shows the impact on trade (treatment effect $\widehat{\alpha_{kt}}$) for each of $k = 1...K$ top exporters to BLR, KAZ, RUS (thin gray lines), as well as the mean treatment effect $\sum \widehat{\alpha_{kt}}/K, K = 30$ (thick red line). The bottom panels show the distribution of the average treatment effect with the kernel density estimate.



Robustness checks. It is common in the literature employing synthetic control methods to run a series of specific robustness tests and report root mean square prediction error (RMSPE) as a goodness-of-fit measure, generally used to gauge the difference between the model-based predicted value and actually observed values as an indication of the fitted model performance. Consistent with the notation introduced in the methodology section, the metric for the pre-treatment period is computed as follows: RMSPE $= \sqrt{\frac{1}{T_0}\sum_{t=1}^{T_0}\left[Y_{1t} - \sum_{j=2}^{J+1} w_j^* Y_{jt}\right]^2}$. For the post-intervention period RMSPE is computed similarly with $t = [T_0 + 1; T]$. In order to facilitate comparability across units characterized by a rather different trade levels and thus magnitudes of the respective prediction errors, I also compute adjusted RMSPE, scaled by the average pre-treatment trade value of the unit concerned: RMSPE$'$ = RMSPE / $\sum_{t=1}^{T_0} Y_{1t}$. These measures are further used to assess the fit of the synthetic unit to the actual unit prior to intervention, as well as to compare trade outcomes before and after treatment and relative to placebo results.

For each treated unit a series of placebo (falsification) tests are conducted to ensure the results are statistically robust. The placebo tests are used to examine whether the observed treatment effect estimated by the synthetic counterfactual method is indeed more pronounced relative to the effect estimated for a randomly chosen pair of countries. The test procedure follows a similar routine involving identification of a specific donor

pool for a randomly selected placebo unit, computation of its synthetic counterfactual and the difference between the actual and the counterfactual trade outcomes. The placebo tests are conducted using thirty randomly selected countries of the donor pool (that is, countries not directly affected by intervention and structurally comparable to the true treated unit for which the test is conducted).

Figure 8: Placebo test results

Note: The figure shows the scaled treatment effect for the treated unit (red line) and associated placebo units (gray lines). The treatment effect is the difference between the actual and the synthetic counterfactual trade values, in bn USD.

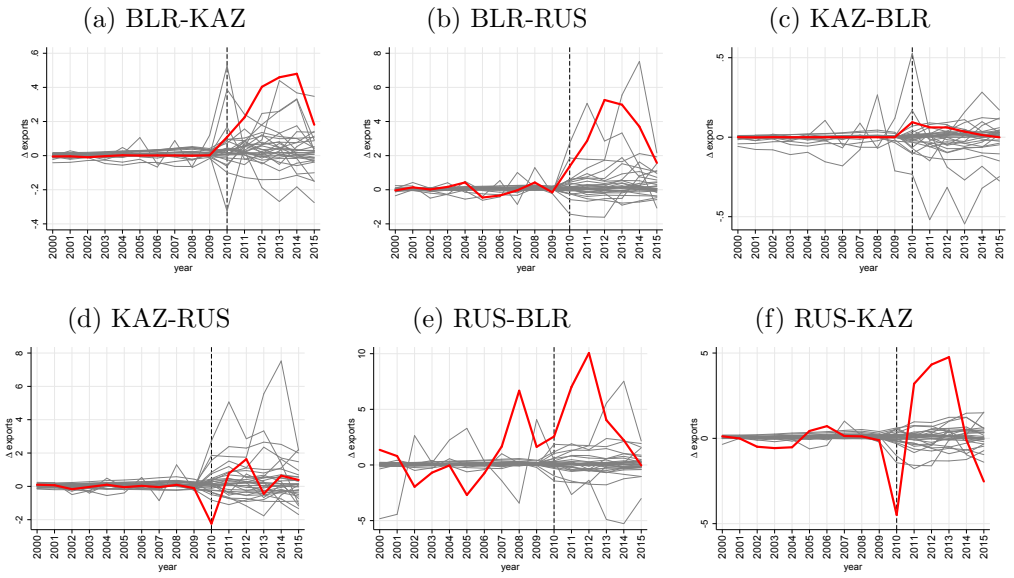


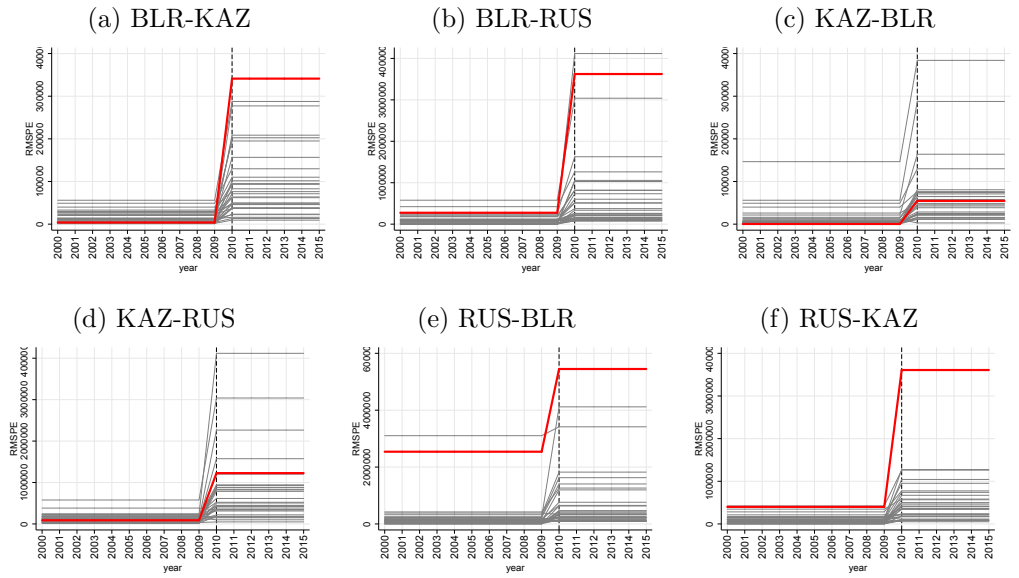
Figure 8 reports the placebo tests results showing the estimated treatment effect (the difference between the actual and the counterfactual exports) and Figure 9 reports associated pre- and post-intervention RMSPE for the treated units and corresponding placebos. To ensure comparability across units with different magnitudes of trade, I also report the scaled treatment effect for the treated unit and placebos along with the adjusted RMSPE values in the Appendix. As noted above, while BLR-KAZ and BLR-RUS cases demonstrate robustness of results in terms of placebo tests and the ratios of post-treatment and pre-treatment RMSPE, the impact of Eurasian integration on KAZ-BLR and KAZ-RUS units is less clear, and RUS-BLR and RUS-KAZ results are plagued by relatively high pre-intervention RMSPE indicating difficulties in identifying a synthetic control group to closely mimic the volatile trade dynamics.

4.2 Industry-level analysis: which sectors benefited?

Results from the gravity model. The gravity model of trade including the same covariates as at the aggregate-level analysis was estimated separately for each of the fourteen broadly defined sectors (see Figure 10 for the composition and description of sectors).

Figure 9: RMSPE

Note: The figure shows RMSPE before and after treatment (2010). The red line denotes the treated unit, the gray lines denote associated placebo units.



Estimation results point at significant heterogeneity of the effects of Eurasian integration across sectors (see Figure 10 for baseline results using Heckman two-stage sample selection model; panel fixed effects model results are also reported for reference, although the method suffers from the bias associated with the censoring of zero trade values).

In most cases the impact of the EACU on intra-bloc trade is positive and statistically significant at the 1% level. Economic significance (Panel b) however varies considerably across sectors with the Mineral products (Sector 4) showing the highest magnitude of the impact relative to the level expected based on the gravity model variables alone. Animal Products (Sector 1) is the second highest-ranked sector with the observed export value exceeding the expected level by a factor of four. Plastics/Rubber (6), Metals (12) and Transportation (14) also stand high with the export gains of around 300% attributed to the impact of Eurasian integration.[13]

As regards trade diversion effects, based on the gravity model results, for most sectors the EACU implementation resulted in a negative impact on imports from countries outside the union. Most notable import trade diversion is observed in Mineral Products (4), and, to a smaller extent in Leather (7), Wood (8) and Metals (12) sectors. Interestingly, in the case of the Foodstuffs sector (3), imports from non-EACU countries benefited (extra trade about 50% above the expected level due to EACU impact), which may be indicative of a greater openness induced by harmonization of technical and SPS regulations along

[13] The results for Sector 14 however are not statistically significant, owing to the fact that the trade creation gains, while initially sizeable, dissipated towards the year 2015, as evidenced by the sectoral estimation results from the synthetic control method.

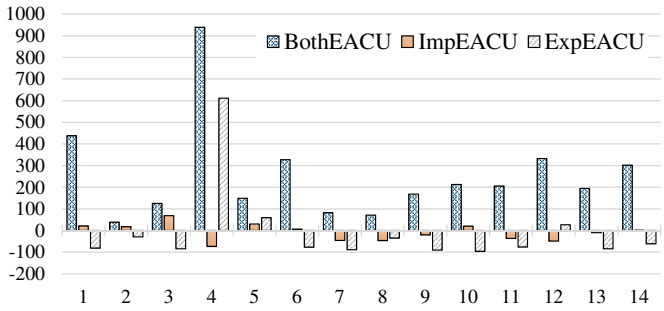
Figure 10: Gravity model estimation results, sectoral analysis

Note: Panel (a) lists the 14 sectors along with the short description and included HS2-digit industries. Panel (b) plots the magnitude of the EACU trade creation and trade diversion effects based on the Heckman model estimates for the fourteen sectors, converted to percent-changes as $100\% \times [exp(\beta) - 1]$. Panel (c) shows estimates of the EACU effects from the Heckman two-step sample selection and the Panel fixed effects models with importer-year and exporter-year effects along with conventional gravity model covariates—GDP of exporter and importer, bilateral weighted distance, remoteness and dummy variables for common border, language, colonial ties, legal origin, currency, landlocked and free trade agreement.

(a) List of sectors

Sector	HS2 codes	Sector description
1	01-05	Animal & Animal Products
2	06-15	Vegetable Products
3	16-24	Foodstuffs
4	25-27	Mineral Products
5	28-38	Chemicals & Allied Industries
6	39-40	Plastics / Rubbers
7	41-43	Raw Hides, Skins, Leather, & Furs
8	44-49	Wood & Wood Products
9	50-63	Textiles
10	64-67	Footwear / Headgear
11	68-71	Stone / Glass
12	72-83	Metals
13	84-85	Machinery / Electrical
14	86-89	Transportation

(b) Economic impact by sector



(c) Heckman model estimates

	Sectors													
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
BothEACU	1.682**	0.324	0.811	2.341***	0.912***	1.453**	0.600	0.536	0.985*	1.141**	1.118	1.464***	1.082*	1.391
	(0.785)	(0.400)	(0.672)	(0.351)	(0.337)	(0.670)	(0.680)	(0.778)	(0.590)	(0.531)	(0.804)	(0.362)	(0.577)	(0.921)
ImpEACU	0.192	0.162	0.522***	-1.322***	0.264**	0.061	-0.616***	-0.624***	-0.223**	0.183	-0.448***	-0.668***	-0.108	0.012
	(0.174)	(0.117)	(0.109)	(0.138)	(0.114)	(0.119)	(0.131)	(0.128)	(0.113)	(0.154)	(0.122)	(0.114)	(0.125)	(0.149)
ExpEACU	-1.691***	-0.349**	-1.828***	1.962***	0.465***	-1.463***	-2.207***	-0.428***	-2.353***	-3.298***	-1.441***	0.234**	-1.829***	-0.942***
	(0.178)	(0.151)	(0.130)	(0.171)	(0.118)	(0.137)	(0.205)	(0.129)	(0.140)	(0.178)	(0.166)	(0.107)	(0.101)	(0.142)

with the lowering of the import tariffs on account of Russia's WTO obligations.

Notably, exports from the EACU to non-bloc trading partners also suffered across the board as the export trade diversion estimates are negative and statistically significant with the exception of Mineral Products (4) for which, by contrast, a notable positive impact is detected, and, to a much smaller extent, Metals (12) and Chemicals (5). This is yet in line with the fact that the global competitiveness of the EAEU is largely concentrated in the commodity sectors as discussed earlier, while the EACU regulations may have induced further locking-in of its less competitive high value-added sectors on the intra-union market.

Results from the synthetic control analysis. Figure 11 summarizes the results of the synthetic counterfactual analysis at the sectoral level. Detailed figures of actual versus synthetic counterfactual trade dynamics for each sector are reported in the Appendix (Figure 14). The impact of Eurasian integration varies significantly across countries and sectors in terms of the direction and significance, and is consistent with the aggregate-level synthetic counterfactual modeling results and evidence from the sectoral gravity model estimations. Overall, while Belarus appears to be a major beneficiary of Eurasian

integration and Russian exports exhibit largely positive outcomes as well, the impact on Kazakhstan is mixed with lower gains and some industries showing negative dynamics relative to the counterfactual scenario.

In particular, exports from Belarus to both Kazakhstan and Russia improved in most sectors after the launch of the EACU. The positive impact was relatively more sustained in the commodity and agri-food sectors. In more advanced sectors, e.g. clothing, machinery and transportation, the initially significant gains diminished towards 2015. Similarly, Russian exports to Belarus and Kazakhstan also mostly improved on account of Eurasian integration. Besides commodity sectors (Mineral Products, Metals), especially large trade gains (in absolute nominal terms) accrued to the Chemicals, Machinery and Transportation sectors. In the case of Kazakhstan, however, improvements occurred mostly in its exports to Russia, particularly, in the Metals and Machinery sectors (the positive effect also dissipated over 2014-2015). Sustained trade creation effects are observed in the Foodstuffs, as well as the Leather/Footwear sectors. The share of the latter in total exports however is insignificant. At the same time, certain export sectors of Kazakhstan (Vegetable Products, Mineral Products, Chemicals) were affected adversely with actual trade lower than the estimated counterfactual.

Comparing across industries, among the most sizeable export sectors in the EACU context (Panel b of Figure 11), the largest gains accrued to BLR-RUS exports in Sector 1 (Animal Products) as the average value of exports tripled relative to the pre-2010 average level and in comparison with the counterfactual scenario. Overall, gains in the agri-food sectors (Sectors 1-3) appear to be most substantial and sustained relative to the counterfactual, especially in the case of Belarus exporting to Russia. Other notable gains also occurred in mutual trade in Sectors 13-14 (Machinery and Transportation), which is especially noteworthy given that the EAEU countries are generally not competitive in the technologically advanced sectors in the global context with the exception of certain narrow market niches. However, as was evident also from the aggregate-level analysis, the observed trade creation gains with just a few exceptions were short-lived and came to a halt over the period 2014–2015.

Consistent with the evidence from the gravity model, the Mineral Products sector (4) benefited significantly from the Eurasian integration. However, this was entirely due to trade improvements between Belarus and Russia. In particular, in absolute nominal terms, the highest gains from the EACU ($\widehat{\alpha}$) across all sectors are attributed to exports in Sector 4 from Russia to Belarus with an average excess export value (i.e. value exceeding the counterfactual value) of over 6.6 bn USD (see Table 2 for details). That is hardly surprising as Belarus heavily relies on imports of natural gas and crude oil from Russia, which is further refined and exported to European countries, and the EACU has provided a general framework to facilitate free flow of petroleum (nevertheless, the disputes between Belarus and Russia on fair pricing schemes are still recurrent). By contrast, trade in the

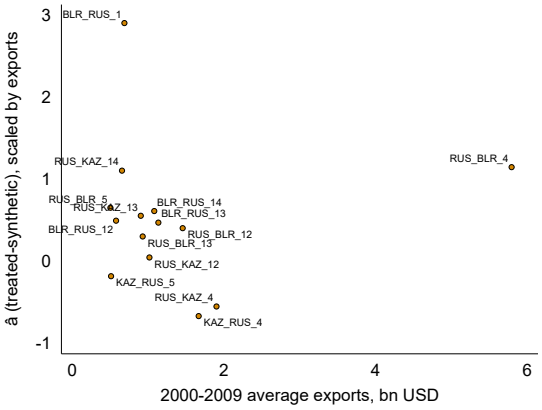
Figure 11: Synthetic control results, sectoral analysis

Note: Panel (a) summarizes the impact of Eurasian integration on the fourteen sectors, indicating the pattern of the trade creation effect over the period 2010–2015: [↗↗] / [↗→] denote a continuously increasing / sustained positive trade creation effect (relative to the counterfactual); [→→] — no robustly identified effect; [↘↘] — negative impact on trade (actual trade below synthetic counterfactual); [↗↘] / [↗→] — positive trade creation trend followed by a decline to insignificant levels. Robust positive and negative effects are color-coded, respectively, by green and red. The figures indicate the 2000–2009 average export value in bn USD with blue bars reflecting the sector size relative to other EACU sectors. Panel (b) plots the average treatment effect over the period 2010–2015 scaled by the pre-treatment average sector export value ($\widehat{\alpha}$, vertical axis) for the largest EACU sectors with the average pre-treatment export value of at least 0.5 bn USD (horizontal axis). Dots indicate exporter-importer-sector units.

(a) Summary table

HS2		sector	exporter-importer					
			BLR-KAZ	BLR-RUS	KAZ-BLR	KAZ-RUS	RUS-BLR	RUS-KAZ
01-05	1	Animal & Animal Products	↗↘	↗→		↘↗	↗↘	↗↘
			13.4	687.6	0.6	16.9	67.0	90.2
06-15	2	Vegetable Products	→↗	↗↗	↘→	↘→	→→	→→
			0.5	53.5	11.2	195.4	144.7	103.2
16-24	3	Foodstuffs	↗→	↗→	↘→	↗↗	↗→	→→
			7.6	310.3	0.4	27.4	325.3	389.7
25-27	4	Mineral Products	↗→	↗→		↘→	↗→	↘→
			1.2	98.3	0.4	1666.5	5792.2	1901.3
28-38	5	Chemicals & Allied Industries	↗→	↗→	↗↘	↘↗	↗→	↗→
			9.0	185.4	3.3	511.5	503.1	467.6
39-40	6	Plastics / Rubbers	→→	↗↘		↗↘	→→	↗→
			20.5	399.4	3.0	15.9	441.3	266.6
41-43	7	Raw Hides, Skins, Leather, Furs		↗↘		↗→	↗↘	↗→
			0.1	34.3	2.2	0.8	55.9	3.5
44-49	8	Wood & Wood Products	↗↘	↗→		↗↘	↗→	→→
			10.7	209.3	0.3	5.6	246.7	295.2
50-63	9	Textiles	↗→	↗↘	↗↘	↗↘	→→	↗→
			5.9	498.4	3.7	55.0	174.9	51.2
64-67	10	Footwear / Headgear	↗↘	↗↘		↗→	↗↗	↗→
			0.3	53.8	0.1	1.1	22.8	7.2
68-71	11	Stone / Glass	↗→	↗↘		→↗	↗→	↗↘
			4.8	252.5	0.0	3.8	116.8	182.2
72-83	12	Metals	↗→	↗↘	↘↘	↗↘	↗↘	→→
			8.5	577.4	27.6	474.9	1455.6	1017.4
84-85	13	Machinery / Electrical	↗↘	↗↘	→→	↗↘	↗↘	↗↘
			31.8	1135.2	3.6	121.5	928.2	903.3
86-89	14	Transportation	↗↘	↗↘	↗↘	↗↘	↗↘	↗→
			55.5	1081.0	3.7	41.9	233.3	655.9

(b) Impact on the largest EACU sectors



Mineral Products sector between Russia and Kazakhstan has stagnated with an average impact of Eurasian integration estimated to be negative in the post-treatment period, which however at least to some extent could be the results of changing accounting and contractual practices after the implementation of the EACU,[14] along with the collapse of the global oil prices.

5 Conclusion

The present study analyzes trade-related effects of Eurasian economic integration. Estimations based on the gravity model of trade and the synthetic control methods support the conjecture that the implementation of the EACU has been among major factors

[14] More specifically, following the EACU implementation the transit of petroleum from Russia via Kazakhstan to third countries has been accounted as transit and exports to third countries rather than exports to Kazakhstan.

Table 2: Synthetic control analysis, sectoral results

Note: The table reports results of synthetic control estimations for sectors $i = 1...14$ for the treated units (Exporter→Importer). X, mn$ denotes pre-treatment (2000-2009) average export value of sector i in mn USD; X/$\sum$X—average share of sector i in total exports of the treated exporter; Δ%X and ΔX—%-change and change in average exports before and after 2010 (2000-2009 and 2010–2015, respectively); $\widehat{\alpha}$—treatment effect in mn USD (difference between actual and synthetic counterfactural trade for the treated unit); $\widehat{\alpha}$/X—treatment effect divided by pre-treatment export value of i . Trade data is from the CEPII BACI database.

BLR→KAZ							BLR→RUS						
i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X	i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X
1	13.4	7.3	586.0	78.7	34.4	2.6	1	687.6	11.6	291.1	2001.5	1998.5	2.9
2	0.5	0.2	3365.6	15.3	13.9	30.7	2	53.5	0.9	464.6	248.7	233.7	4.4
3	7.6	4.1	600.0	45.7	28.6	3.8	3	310.3	5.2	135.0	418.9	532.9	1.7
4	1.2	0.6	2700.2	31.3	23.1	20.0	4	98.3	1.7	539.5	530.6	499.3	5.1
5	9.0	4.9	264.2	23.7	4.3	0.5	5	185.4	3.1	114.5	212.3	203.9	1.1
6	20.5	11.1	262.7	53.8	-2.0	-0.1	6	399.4	6.8	162.3	648.4	326.5	0.8
7	0.1	0.0	1146.7	0.6			7	34.3	0.6	14.0	4.8	-6.4	-0.2
8	10.7	5.8	195.7	21.0	9.3	0.9	8	209.3	3.5	56.8	118.9	117.7	0.6
9	5.9	3.2	189.0	11.1	7.1	1.2	9	498.4	8.4	70.5	351.2	241.2	0.5
10	0.3	0.1	382.2	1.0	0.8	3.2	10	53.8	0.9	10.3	5.5	21.8	0.4
11	4.8	2.6	109.5	5.3	4.7	1.0	11	252.5	4.3	83.9	211.9	128.0	0.5
12	8.5	4.6	213.1	18.0	12.8	1.5	12	577.4	9.8	83.7	483.6	284.8	0.5
13	31.8	17.2	260.7	82.8	55.2	1.7	13	1135.2	19.2	69.2	786.1	533.0	0.5
14	55.5	30.1	155.4	86.2	61.7	1.1	14	1081.0	18.3	76.8	829.8	660.2	0.6

KAZ→BLR							KAZ→RUS						
i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X	i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X
1	0.3	0.5	129.1	0.4			1	16.9	0.5	88.1	14.9	2.9	0.2
2	11.2	18.8	-67.4	-7.6	-25.1	-2.2	2	195.4	6.2	-25.5	-49.8	-110.6	-0.6
3	0.4	0.6	-24.2	-0.1	-0.5	-1.5	3	27.4	0.9	117.7	32.3	33.8	1.2
4	0.4	0.7	6909.5	29.6			4	1666.5	53.0	55.7	929.0	-1119.9	-0.7
5	3.3	5.5	233.1	7.7	6.4	1.9	5	511.5	16.3	46.7	238.6	-94.6	-0.2
6	3.0	5.0	-20.5	-0.6			6	15.9	0.5	239.4	38.1	14.9	0.9
7	2.2	3.7	-97.4	-2.2			7	0.8	0.0	896.8	7.5	7.3	8.8
8	0.3	0.5	-25.3	-0.1			8	5.6	0.2	95.5	5.3	3.2	0.6
9	3.7	6.1	-17.1	-0.6	0.4	0.1	9	55.0	1.7	82.4	45.3	43.6	0.8
10	0.1	0.2	26.0	0.0			10	1.1	0.0	3953.2	42.8	42.8	39.5
11	0.0	0.0	433.8	0.0			11	3.8	0.1	1948.6	74.3	70.1	18.4
12	27.6	46.1	70.6	19.4	-45.2	-1.6	12	474.9	15.1	200.3	951.3	335.6	0.7
13	3.6	6.0	26.8	1.0	1.1	0.3	13	121.5	3.9	343.4	417.2	389.6	3.2
14	3.7	6.2	89.5	3.3	5.3	1.4	14	41.9	1.3	4.9	2.1	11.3	0.3

RUS→BLR							RUS→KAZ						
i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X	i	X, mn$	X/$\sum$X	Δ%X	ΔX	$\widehat{\alpha}$	$\widehat{\alpha}$/X
1	67.0	0.6	65.7	44.0	27.0	0.4	1	90.2	1.4	125.8	113.5	29.4	0.3
2	144.7	1.4	31.9	46.2	3.8	0.0	2	103.2	1.6	106.5	109.9	-28.9	-0.3
3	325.3	3.1	57.6	187.4	202.0	0.6	3	389.7	6.0	148.5	578.5	166.9	0.4
4	5792.2	54.5	115.8	6709.2	6642.3	1.1	4	1901.3	29.3	75.7	1440.1	-1054.4	-0.6
5	503.1	4.7	74.2	373.4	327.6	0.7	5	467.6	7.2	88.0	411.4	112.4	0.2
6	441.3	4.2	83.5	368.3	66.3	0.2	6	266.6	4.1	152.8	407.4	134.8	0.5
7	55.9	0.5	11.2	6.3	16.7	0.3	7	3.5	0.1	181.6	6.4	6.2	1.8
8	246.7	2.3	56.0	138.2	70.2	0.3	8	295.2	4.5	88.2	260.3	134.7	0.5
9	174.9	1.6	31.3	54.7	23.5	0.1	9	51.2	0.8	235.1	120.4	80.5	1.6
10	22.8	0.2	102.4	23.3	22.3	1.0	10	7.2	0.1	637.5	45.8	35.8	5.0
11	116.8	1.1	117.4	137.1	121.7	1.0	11	182.2	2.8	142.1	258.8	153.6	0.8
12	1455.6	13.7	56.8	826.5	584.7	0.4	12	1017.4	15.7	77.9	792.3	44.8	0.0
13	928.2	8.7	55.3	513.6	278.9	0.3	13	903.3	13.9	103.2	932.5	499.6	0.6
14	233.3	2.2	107.3	250.4	217.2	0.9	14	655.9	10.1	124.8	818.6	724.1	1.1

boosting mutual trade of its members, which was significantly higher both relative to the counterfactual no-integration scenario and relative to the expected levels conditional on the gravity model fundamentals. At the same time, there is evidence of trade diversion effects for some countries and sectors as imports from non-EACU countries were negatively affected as a result of higher import protection levels induced by the EACU regulations, which is typical for trade-diverting customs union (imports from some countries outside the EACU were, on the contrary, positively affected). While there is a relatively higher incidence of trade diversion effects in Kazakhstan, which had a more liberal trade regime prior to its accession to the EACU, the trade diversion effect notably intensifies over the period of 2014–2015 for all EACU members. What is especially alarming is the quick decline of the trade creation effect to negligible levels towards the year 2015 as the Eurasian bloc has been facing multiple challenges of macroeconomic and geopolitical nature affecting rather adversely its trade.

In light of a high dependence of the EAEU countries on exports of commodities as a major driver of economic growth, given the collapse of global oil prices, the capacity of the member states to engage in the necessary structural reforms to boost competitiveness in advanced industries is yet more limited nowadays and in the years to come. At the same time, as the study shows, the Eurasian bloc has not been an entirely dysfunctional arrangement as often portrayed, but rather helped boost trade not only in the commodity and agri-food sectors, but also in the advanced Machinery and Transportation sectors.

The EAEU is potentially capable both to aid transition to a more competitive state or, on the contrary, to conserve the present commodity-based economic structure of its member states, all suffering from similar structural challenges. Which of the two directions it will follow largely depends on the ability of its member states to recognize the urgency of addressing these challenges in the present difficult macroeconomic circumstances and steer the common regulatory framework in the direction facilitating competitiveness of national economies in a broad sense, and fully commit to the regulations already adopted and envisioned, particularly those focusing on the elimination of remaining non-tariff barriers to trade and transition to internationally recognized standards, regulatory transparency and level playing field across the union, fostering business environment to facilitate foreign direct investment and participation in global value chains.

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Appendix

Table 3: Top exporters to the EACU countries, 2000–2009 average

Note: The table shows top exporters to the EACU countries, their average export values over the period 2000–2009, and the share of exporter in total imports of the EACU country. Rank* – rank excluding EAEU and CISFTA countries.

importer: BLR					importer: KAZ					importer: RUS				
Rank	Rank*	exporter	exports, mn USD	share, %	Rank	Rank*	exporter	exports, mn USD	share, %	Rank	Rank*	exporter	exports, mn USD	share, %
1		RUS	10600.00	59.96	1		RUS	6496.95	35.53	1	1	DEU	20200.00	16.14
2	1	DEU	1439.00	8.12	2	1	CHN	1832.77	10.02	2	2	CHN	12000.00	9.58
3		UKR	885.31	4.99	3	2	DEU	1368.45	7.48	3		UKR	7433.15	5.95
4	2	POL	626.33	3.53	4	3	USA	920.79	5.04	4	3	ITA	6190.56	4.95
5	3	CHN	432.94	2.44	5		UKR	780.66	4.27	5		BLR	5912.05	4.73
6	4	ITA	409.27	2.31	6	4	ITA	734.27	4.02	6	4	JPN	5611.63	4.49
7	5	LTU	294.76	1.66	7	5	FRA	597.32	3.27	7	5	USA	5420.05	4.34
8	6	USA	217.95	1.23	8	6	JPN	508.86	2.78	8	6	FIN	5118.10	4.10
9	7	FRA	216.67	1.22	9	7	TUR	463.97	2.54	9	7	FRA	4766.91	3.81
10	8	NLD	190.46	1.07	10	8	GBR	432.76	2.37	10	8	KOR	4113.39	3.29
11	9	GBR	154.29	0.87	11	9	KOR	285.07	1.56	11	9	POL	3436.09	2.75
12	10	BEL	151.39	0.85	12	10	POL	233.85	1.28	12	10	NLD	3197.96	2.56
13	11	CZE	146.09	0.82	13		UZB	232.57	1.27	13	11	GBR	3196.39	2.56
14	12	AUT	112.72	0.64	14	11	FIN	229.72	1.26	14		KAZ	3145.53	2.52
15	13	JPN	103.71	0.58	15	12	NLD	220.81	1.21	15	12	TUR	2524.18	2.02
16	14	SWE	103.49	0.58	16	13	SWE	185.55	1.01	16	13	BRA	2416.92	1.93
17	15	LVA	100.25	0.57	17		BLR	184.12	1.01	17	14	BEL	2269.83	1.82
18	16	CHE	90.84	0.51	18	14	AUT	162.41	0.89	18	15	SWE	2018.61	1.62
19	17	HUN	90.33	0.51	19	15	BEL	147.75	0.81	19	16	AUT	1828.66	1.46
20	18	TUR	88.49	0.50	20	16	CHE	131.31	0.72	20	17	ESP	1683.14	1.35
21	19	ESP	81.71	0.46	21	17	CAN	126.62	0.69	21	18	HUN	1581.76	1.27
22	20	BRA	81.55	0.46	22	18	ARE	124.81	0.68	22	19	CZE	1558.29	1.25
23	21	FIN	77.26	0.44	23	19	NOR	122.98	0.67	23	20	CHE	1325.82	1.06
24	22	DNK	69.70	0.39	24	20	IND	116.12	0.64	24	21	DNK	1104.07	0.88
25	23	KOR	66.97	0.38	25		KGZ	105.70	0.58	25	22	LTU	1094.68	0.88
26	24	SVK	65.85	0.37	26	21	CZE	104.70	0.57	26	23	IND	994.47	0.80
27		MDA	63.03	0.36	27	22	BRA	102.40	0.56	27	24	SVK	872.23	0.70
28		KAZ	57.19	0.32	28	23	HUN	89.47	0.49	28	25	EST	829.14	0.66
29	25	IND	54.74	0.31	29	24	TKM	85.60	0.47	29		UZB	818.33	0.65
30	26	NOR	49.20	0.28	30	25	ESP	78.81	0.43	30	26	NOR	699.71	0.56
31	27	EST	46.54	0.26	31	26	AZE	76.93	0.42	31	27	MYS	698.96	0.56
32	28	SVN	43.32	0.24	32	27	ISR	75.52	0.41	32	28	CAN	645.06	0.52
33	29	MYS	39.53	0.22	33	28	LTU	69.81	0.38	33	29	SVN	600.81	0.48
34	30	ARG	32.14	0.18	34	29	ROU	55.06	0.30	34	30	ARG	533.98	0.43
					35	30	DNK	49.51	0.27					

Table 4: Descriptive statistics

Variable	N	Mean	Std. dev.	Min	Max
Non-zero exports, log	398,976	14.65	3.82	6.91	26.85
Exporter's GDP, log	611,520	23.77	2.47	16.40	30.52
Importer's GDP, log	611,520	23.77	2.47	16.40	30.52
Weighted distance, log	708,960	8.83	0.77	4.11	9.90
Landlocked importer	708,960	0.15	0.36	0.00	1.00
Landlocked exporter	708,960	0.15	0.36	0.00	1.00
Common border	708,960	0.01	0.11	0.00	1.00
Common language	708,960	0.17	0.38	0.00	1.00
Past colonial relationship	708,960	0.01	0.10	0.00	1.00
Common legal origin	708,960	0.36	0.48	0.00	1.00
Common currency	708,960	0.01	0.11	0.00	1.00
Exporter's remoteness, log	708,960	25.03	0.24	24.23	25.68
Importer's remoteness, log	708,960	25.03	0.24	24.23	25.68
FTA	708,960	0.09	0.29	0.00	1.00
Both EACU members	708,960	0.00	0.01	0.00	1.00
Importer is a EACU member	708,960	0.01	0.08	0.00	1.00
Exporter is a EACU member	708,960	0.01	0.08	0.00	1.00

Table 5: Synthetic control group composition in aggregate-level trade creation analysis

Note: The table shows the composition of the synthetic control group with weights for each treated unit (exporter → importer) as identified by the synthetic counterfactual method in the aggregate-level analysis. Synthetic control groups for sector-level estimations are available upon request.

Belarus → Kazakhstan		
weight	**exporter**	**importer**
0.222	Lithuania	Estonia
0.203	Iceland	Ireland
0.181	Bulgaria	Croatia
0.129	Macedonia, FYR	Bulgaria
0.106	Romania	Macedonia, FYR
0.104	Azerbaijan	Switzerland
0.054	Netherlands	Azerbaijan
0.001	Azerbaijan	Turkmenistan

Kazakhstan → Russia		
weight	**exporter**	**importer**
0.231	Azerbaijan	Italy
0.213	Ukraine	Turkey
0.16	Finland	Sweden
0.147	Ukraine	Bulgaria
0.078	Norway	Netherlands
0.072	United Kingdom	Finland
0.053	Austria	Hungary
0.028	Sweden	Netherlands
0.018	Norway	Finland

Kazakhstan → Belarus		
weight	**exporter**	**importer**
0.21	Macedonia, FYR	Belgium
0.21	Czech Republic	Turkmenistan
0.153	Uzbekistan	Hungary
0.129	Finland	Azerbaijan
0.08	Azerbaijan	Netherlands
0.064	Iceland	Ireland
0.055	Azerbaijan	Switzerland
0.044	Azerbaijan	Romania
0.031	Lithuania	Cyprus
0.025	Georgia	Romania

Belarus → Russia		
weight	**exporter**	**importer**
0.474	Sweden	Belgium
0.192	Norway	Netherlands
0.172	Austria	Hungary
0.115	Germany	Romania
0.032	Portugal	Germany
0.014	Azerbaijan	Italy

Russia → Belarus		
weight	**exporter**	**importer**
0.357	Ireland	Belgium
0.323	Germany	Romania
0.32	Norway	Netherlands

Russia → Kazakhstan		
weight	**exporter**	**importer**
0.931	Germany	Romania
0.069	Sweden	Denmark

Figure 12: Adjusted RMSPE

Note: The figure shows scaled RMSPE before and after treatment (2010) scaled by the average pre-treatment export value of a respective treated unit. The red line denotes the treated unit, the gray lines denote associated placebo units.

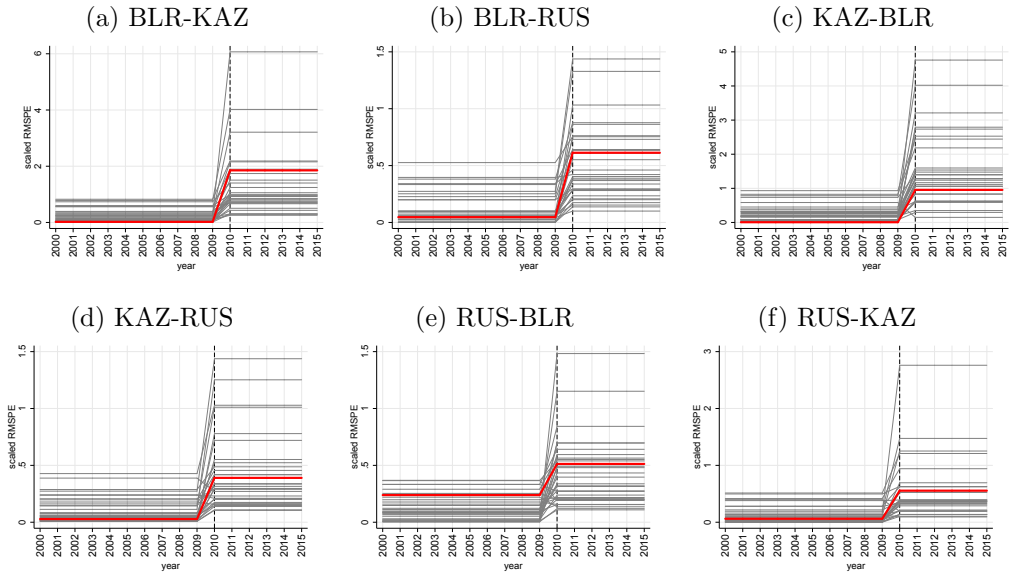


Figure 13: Placebo test results (scaled by exports)

Note: The figure shows the scaled treatment effect for the treated unit (red line) and associated placebo units (gray lines). The treatment effect (difference between the actual and synthetic counterfactual trade values) is scaled, i.e. divided by the average pre-treatment (2000–2009) export value of the respective unit.

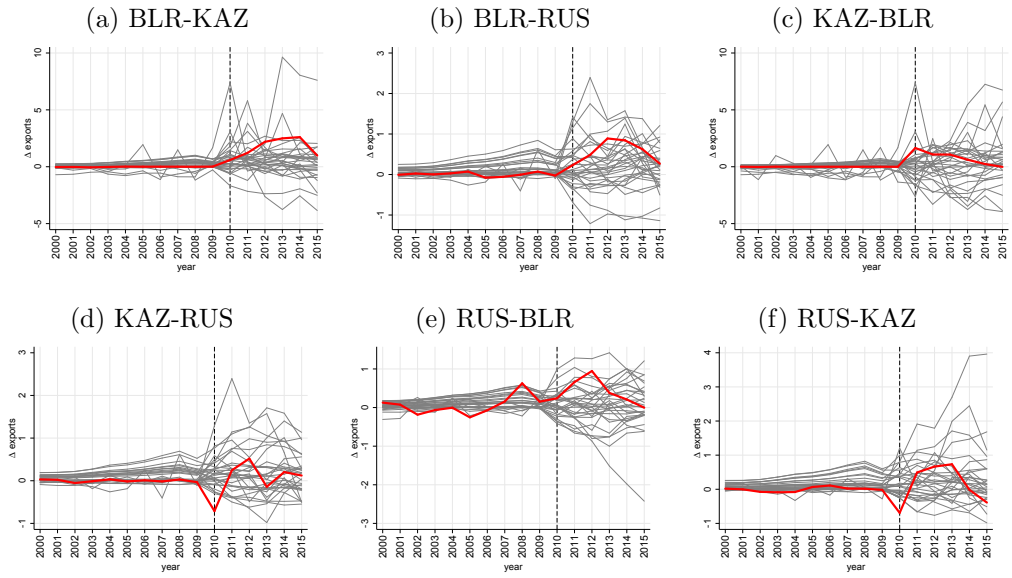
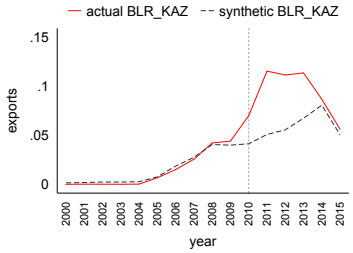


Figure 14: Synthetic control results, industry-level analysis

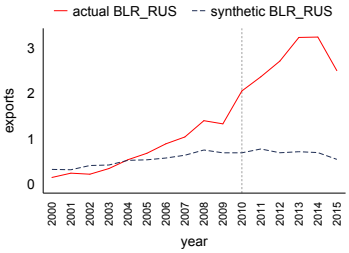
Note: The following figures show the results of the synthetic counterfactual estimations for the fourteen sectors as defined in Table 11. The solid red line indicates the actual trade value (in bn USD) of the treated exporter-importer unit. The dashed blue line indicates the synthetic counterfactual trade value. For some sectors with very low and missing trade values the synthetic control unit could not be estimated.

Sector 1. Animal & Animal Products

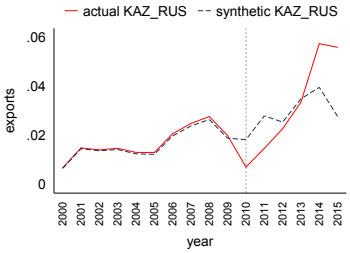
(a) BLR-KAZ



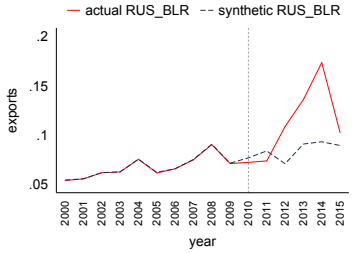
(b) BLR-RUS



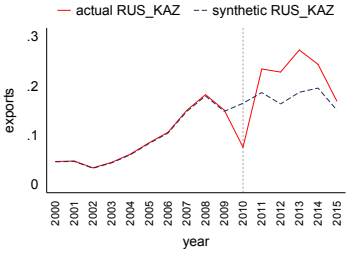
(c) KAZ-RUS



(d) RUS-BLR

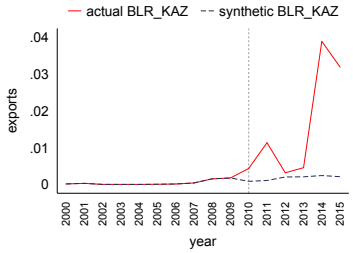


(e) RUS-KAZ

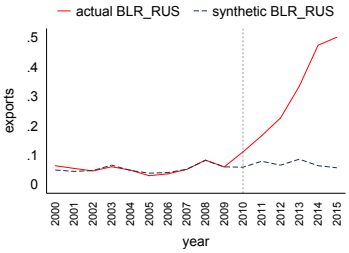


Sector 2. Vegetable Products

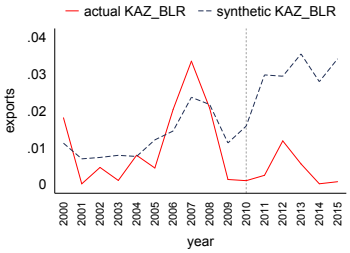
(a) BLR-KAZ



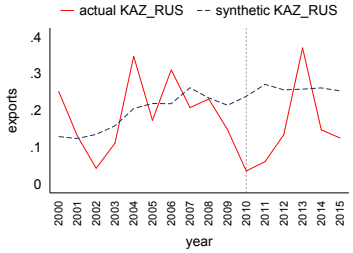
(b) BLR-RUS



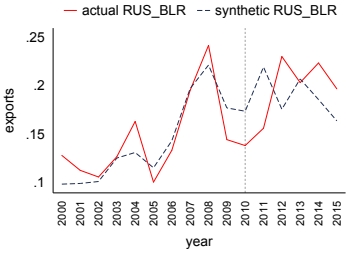
(c) KAZ-BLR



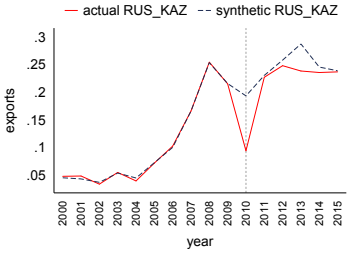
(d) KAZ-RUS



(e) RUS-BLR

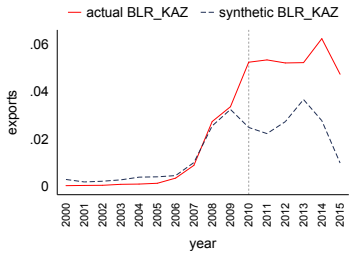


(f) RUS-KAZ

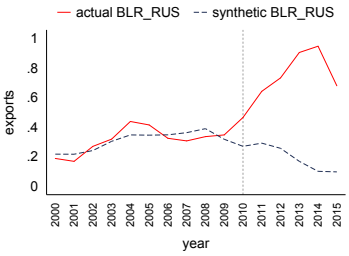


Sector 3. Foodstuffs

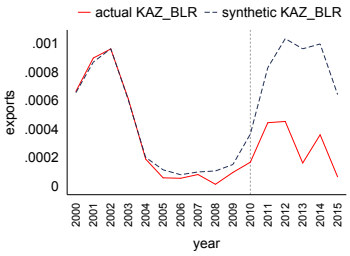
(a) BLR-KAZ



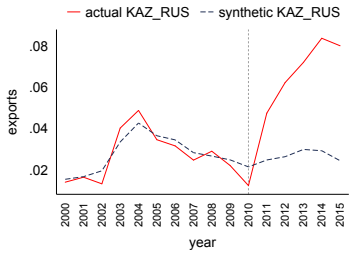
(b) BLR-RUS



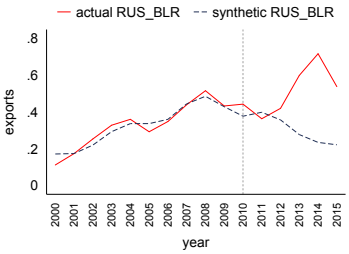
(c) KAZ-BLR



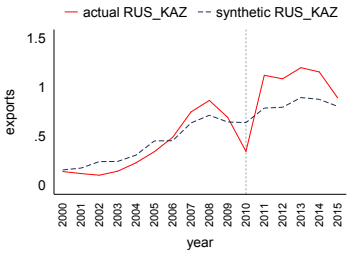
(d) KAZ-RUS



(e) RUS-BLR

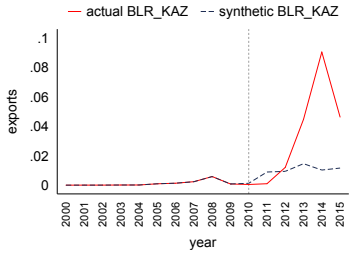


(f) RUS-KAZ

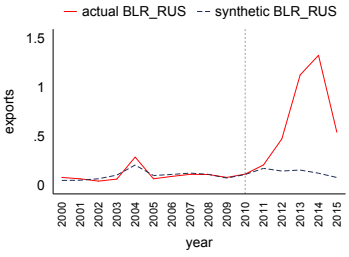


Sector 4. Mineral Products

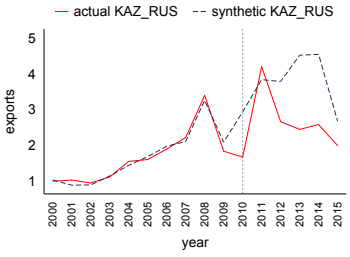
(a) BLR-KAZ



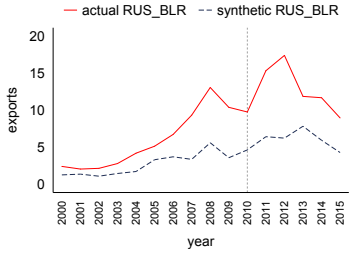
(b) BLR-RUS



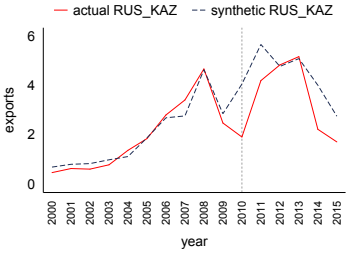
(c) KAZ-RUS



(d) RUS-BLR

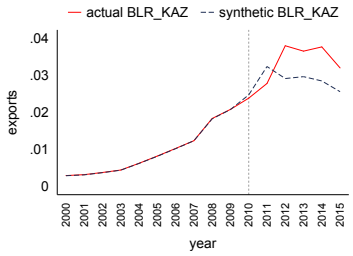


(e) RUS-KAZ

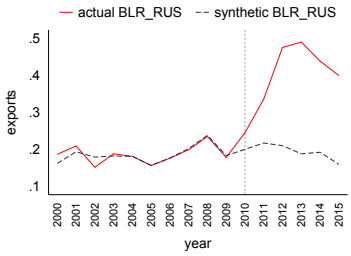


Sector 5. Chemicals & Allied Industries

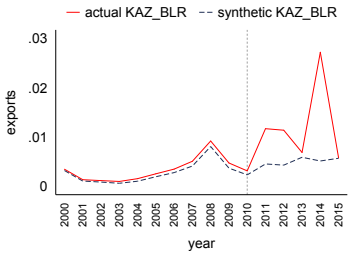
(a) BLR-KAZ



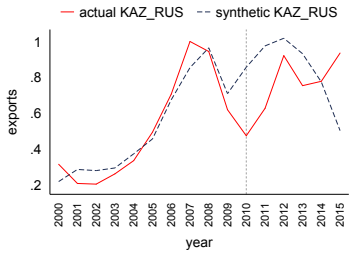
(b) BLR-RUS



(c) KAZ-BLR



(d) KAZ-RUS



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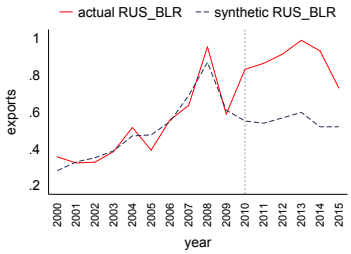
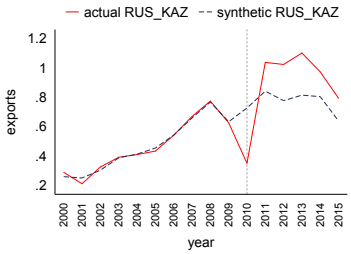
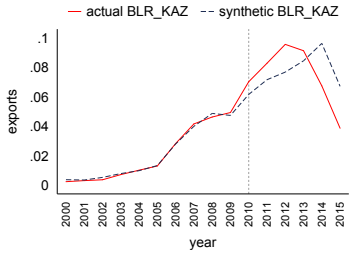


(f) RUS-KAZ

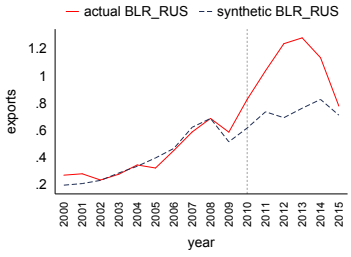


Sector 6. Plastics / Rubbers

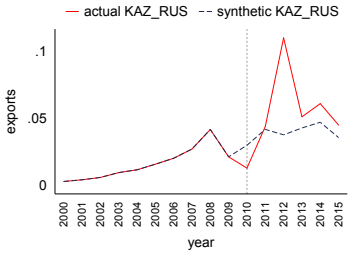
(a) BLR-KAZ



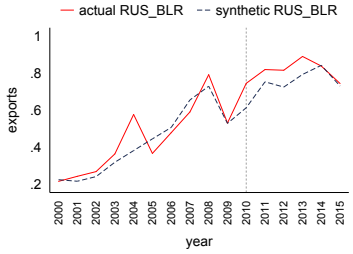
(b) BLR-RUS



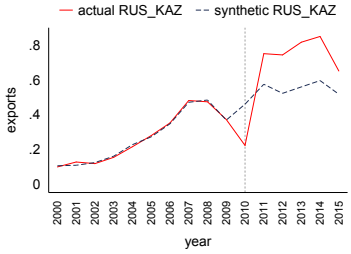
(c) KAZ-RUS



(d) RUS-BLR

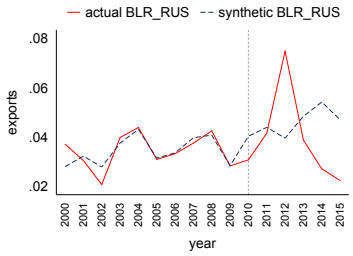


(e) RUS-KAZ

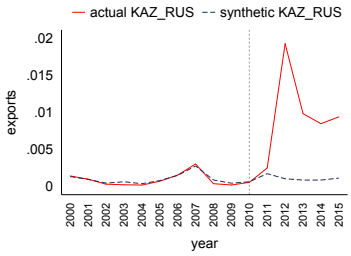


Sector 7. Raw Hides, Skins, Leather, & Furs

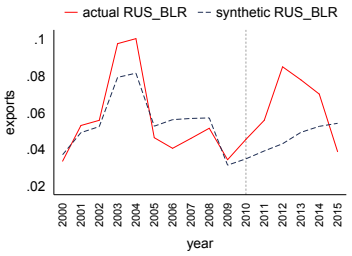
(a) BLR-RUS



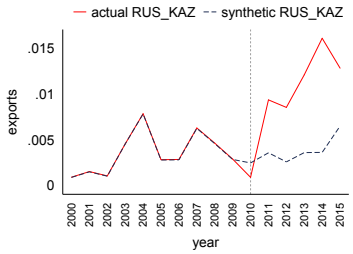
(b) KAZ-RUS



(c) RUS-BLR

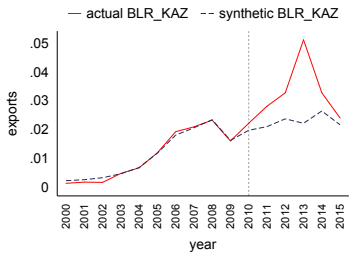


(d) RUS-KAZ

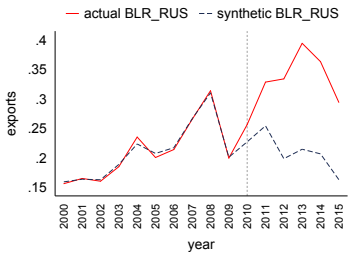


Sector 8. Wood & Wood Products

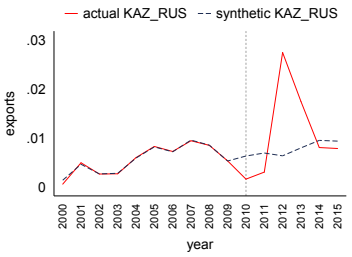
(a) BLR-KAZ



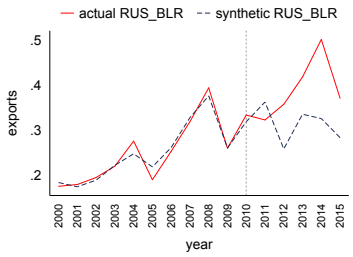
(b) BLR-RUS



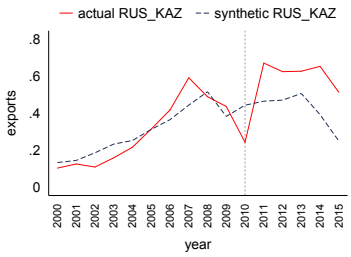
(c) KAZ-RUS



(d) RUS-BLR

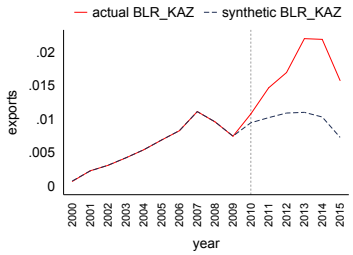


(e) RUS-KAZ

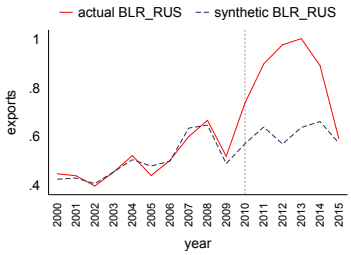


Sector 9. Textiles

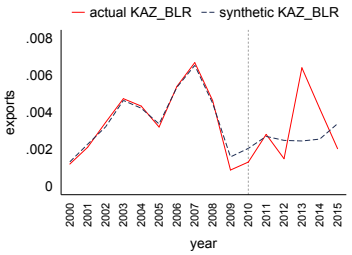
(a) BLR-KAZ



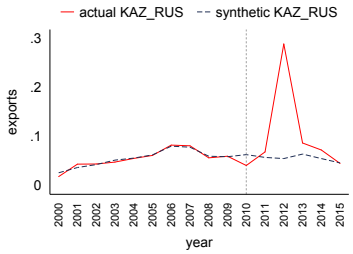
(b) BLR-RUS



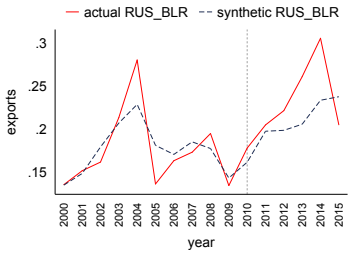
(c) KAZ-BLR



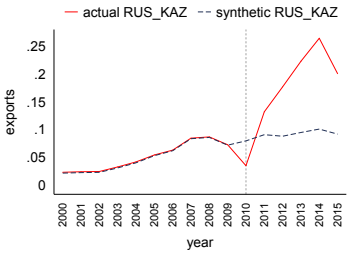
(d) KAZ-RUS



(e) RUS-BLR



(f) RUS-KAZ



Sector 10. Footwear / Headgear

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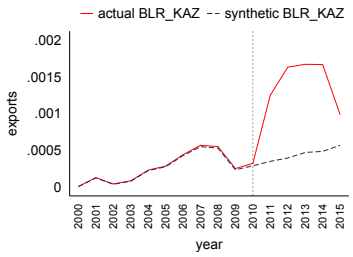

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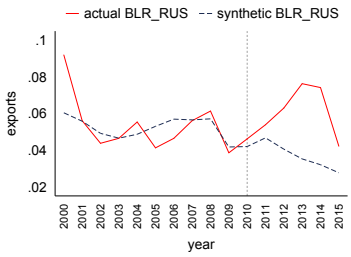

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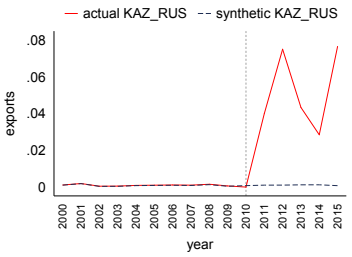

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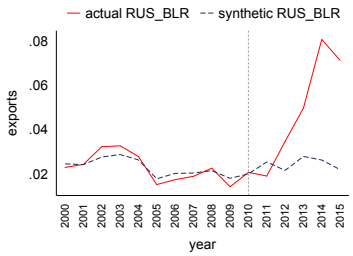

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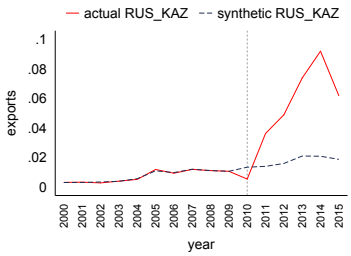

Sector 11. Stone / Glass

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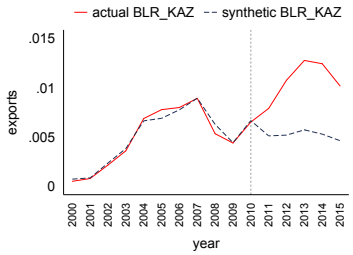

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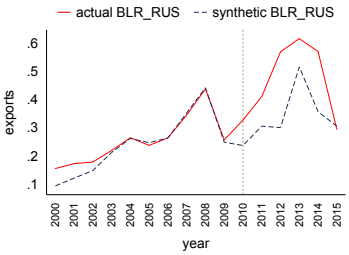

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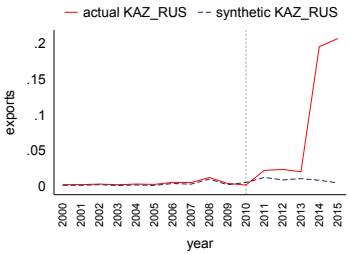

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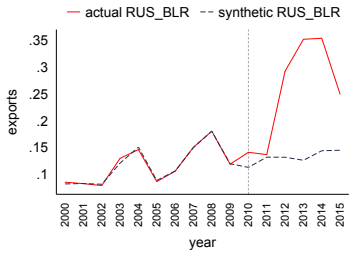

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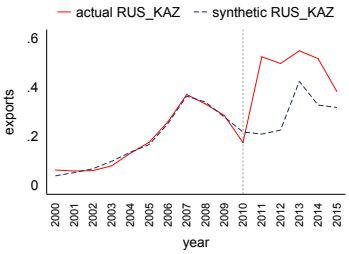

Sector 12. Metals

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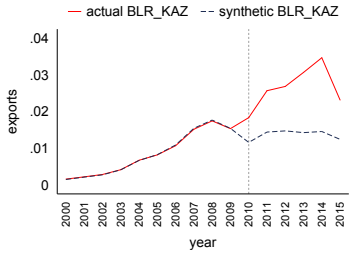

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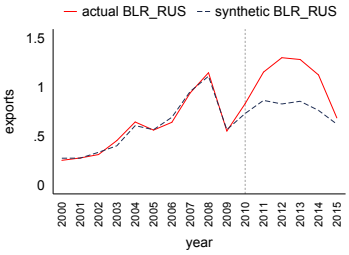

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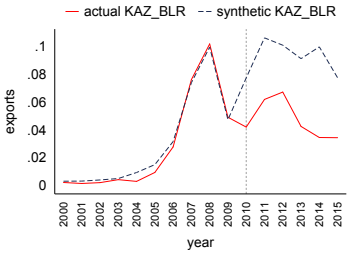

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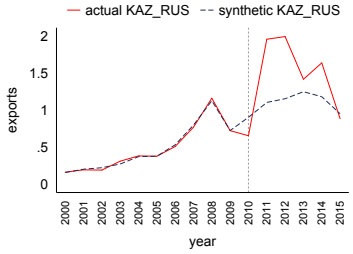

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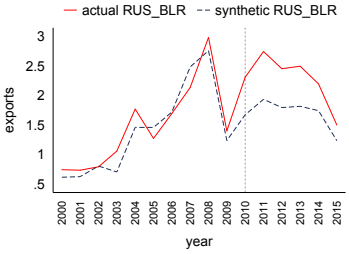

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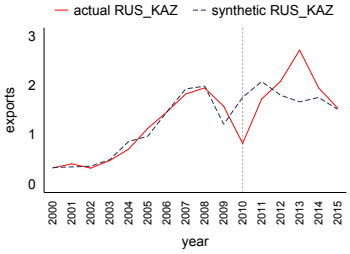

Sector 13. Machinery / Electrical

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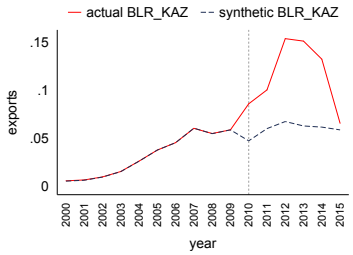

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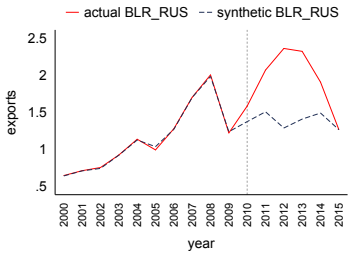

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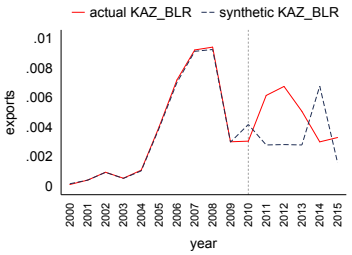

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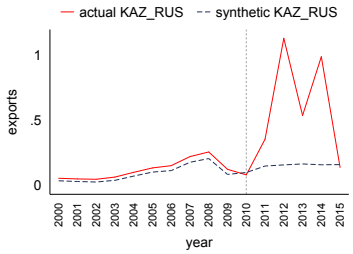

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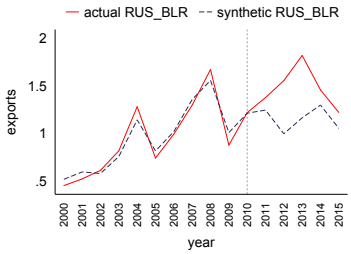

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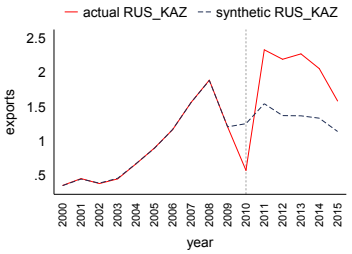

Sector 14. Transportation

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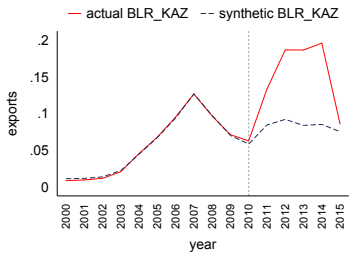

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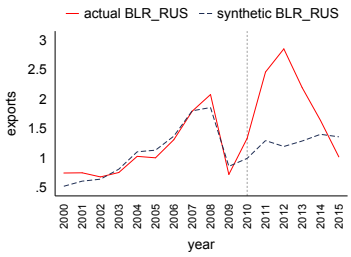

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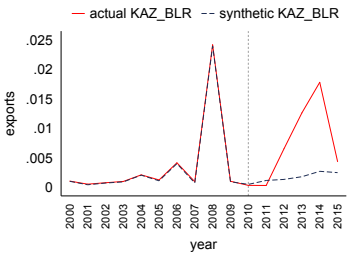

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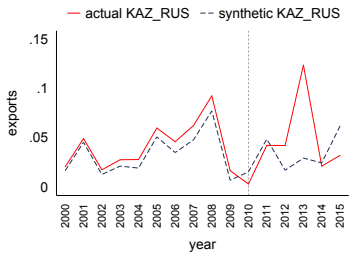

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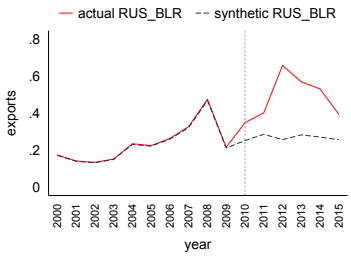

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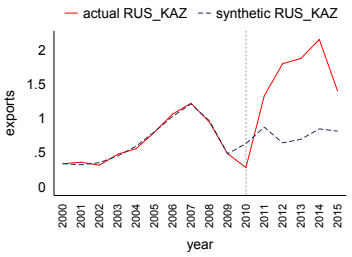

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