The Drivers and Barriers of Trade and Integration in Europe & Central Asia

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Abstract

This article examines the trade and integration patterns of the Europe & Central Asia region, which has a high level of trade and integration, both within the region and with the rest of the world. The article identifies and analyzes the endogenous and exogenous drivers of trade and integration, such as trade liberalization, regional integration, domestic reforms, global trends, technological changes, external shocks, and international agreements. The article also uses a vector autoregression (VAR) model to estimate the impact of trade and integration on four economic indicators: trade openness (Tr), foreign direct investment (FDI), income growth rate (IGS), and environmental growth rate (EGS). The article finds that there is a positive and significant impact of trade openness on itself, but no significant impact of trade openness on the other three indicators. The article concludes that trade and integration have complex and heterogeneous effects on the region's economic performance and development. The article suggests that policy makers should adopt a comprehensive and context-specific approach to enhance the benefits and mitigate the challenges of trade and integration.

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Background

The region including Europe and Central Asia is highly integrated economically, both domestically and internationally. When compared to the global average of 54.9% in 2020, the region's commerce (exports plus imports) was at 87.4%, data from the World Bank shows. Net FDI inflows to the area in 2020 were 2.6% of GDP, which was below the global average of 3.2% (Bussolo & Lopez-Calva, 2014).

Exchanges of products, services, capital, and people across national boundaries are at the heart of both trade and integration. Income, productivity, innovation, competition, and welfare are just few of the economic indicators that may be boosted by greater trade and integration. A number of difficulties and setbacks, including trade barriers, market failures, institutional flaws, and political resistance, stand in the way of trade and integration. In order to improve the results of trade and integration, it is necessary to first get an awareness of the factors that encourage or discourage it (Dhingra et al., 2016; Rusminingsih, Askar,Mutia, Fitria, Wahyudi, 2023).

Endogenous and exogenous factors both have a role as drivers of trade and integration. Domestic policies, institutions, preferences, and capacities are all examples of endogenous factors that originate inside the nations or regions that engage in trade and integration. Exogenous forces, including as global trends, technical developments, external shocks, and international agreements, are not internal to the nations or regions that engage in trade and integration (Börzel & Risse, 2016; Irawan, Sasongko, Mukhlis, Yanto, & Wulandari, 2022).

Some examples of endogenous drivers of trade and integration are; Trade liberalization: This refers to the removal or reduction of tariff and non-tariff barriers to trade, such as quotas, subsidies, regulations, standards, and customs procedures. Trade liberalization can increase market access, reduce trade costs, stimulate competition, and foster specialization. Trade liberalization can be unilateral (implemented by one country or region), bilateral (implemented by two countries or regions), or multilateral (implemented by many countries or regions) (McNamara, 2017; Priyanto, Widarni, & Bawono, 2022).

The term "regional integration" is used to describe the establishment or strengthening of economic and political cooperation among nations or areas that are close in space and time, have a common cultural heritage, or have similar economic or political goals. Free trade zones, customs unions, common markets, economic unions, and political unions are all examples of regional integration. Trade development, economies of scale, policy coordination, and regional stability can all benefit from increased regional integration. (Schneider, 2017; Sasongko, Nehruddin, Musriyatun, Siswanto, 2023).

Domestic reforms: This refers to the improvement or transformation of domestic policies, institutions, governance, infrastructure, human capital, innovation systems, or social protection. Domestic reforms can enhance the competitiveness, productivity, resilience, inclusiveness, and sustainability of the domestic economy. Domestic reforms can also facilitate the adjustment to trade shocks and the capture of trade opportunities (Lin & Katada, 2020)

Some examples of exogenous drivers of trade and integration are; Globalization: This refers to the increasing interdependence and interconnectedness of the world economy due to the expansion and intensification of cross-border flows of goods, services, capital, and people. Globalization can create new markets, opportunities, and challenges for trade and integration. Globalization can also increase competition, diversity, and complexity in the global environment (Agrawal, 2016).

Digitalization: This refers to the adoption and diffusion of digital technologies, such as the internet, e-commerce, artificial intelligence, and blockchain. Digitalization can reduce information asymmetries, transaction costs, and trade barriers. Digitalization can also enable new forms of trade and integration, such as digital services, platforms, and networks. Digitalization can also pose new risks and challenges for trade and integration, such as cyberattacks, data protection, and digital divide (Rymarczyk, 2021).

The term "environmental challenges" is used to describe the problems that arise when the natural environment is altered as a result of human activity. Changes in temperature, precipitation, sea level, and extreme weather events are just a few examples of how environmental concerns may have far-reaching effects on the economy. The need for, and availability of, environmentally friendly goods, services, and technology are examples of the kinds of environmental demand that can spur economic integration and expansion. New environmental norms, agreements, and institutions may be necessary for increased trade and integration to address environmental concerns (Prakash, 2021)

Barriers to trade and integration are those elements that make it more difficult for the advantages of these processes to be fully realised. Both natural and man-made obstacles exist in the way of free commerce and seamless integration. Physical distance and geographical elements, such as transportation expenses and time zones, can act as natural obstacles. Tariffs and quotas are examples of artificial obstacles that are imposed by humans (Kathuria, 2018).

Natural obstacles to trade and integration include; These are the expenses incurred while transporting items or persons from one location to another. The price of transportation is affected by variables including distance, method of transportation, infrastructure, and the cost of fuel. Trade

volume and volume of goods traded can be affected by transportation expenses. As a result, trade patterns may be skewed towards more conveniently located marketplaces or items (Redding & Turner, 2015).

Time zones: These are the differences in local time across different regions or countries. Time zones can affect the synchronization and coordination of trade and integration activities, such as communication, negotiation, and delivery. Time zones can also create opportunities and challenges for trade and integration, such as extending the working hours or exploiting the differences in demand or supply patterns (Hong & Pavlou, 2017).

Some examples of artificial barriers to trade and integration are; Tariffs: These are taxes imposed on imported goods or services. Tariffs can increase the price and reduce the quantity of imports. Tariffs can also affect the production and consumption decisions of domestic agents, causing inefficiency and welfare losses. Tariffs can also create trade diversion and trade distortion effects, altering the pattern and composition of trade (Baldwin, 2017).

Quotas: These are quantitative restrictions imposed on imported goods or services. Quotas can limit the quantity or value of imports. Quotas can also affect the price and allocation of imports, creating rents or shortages. Quotas can also create trade diversion and trade distortion effects, similar to tariffs (Gräßner et al., 2016)

The drivers and barriers of trade and integration are not static but dynamic. They can change over time due to various factors, such as technological innovation, political change, or social preferences. Therefore, trade and integration policies and strategies need to be flexible and adaptive to respond to the changing drivers and barriers of trade and integration. The World Bank provides data and analysis on various indicators of trade and integration, such as exports and imports of goods and services, foreign direct investment, charges for the use of intellectual property, and trade facilitation. The World Bank also provides support and advice to its clients and partners to enhance their trade and integration performance and potential (Kraegpøth et al., 2017)

Research Method

We proxied Adjusted Foreign Direct Investment variable, Adjusted Imports of goods and services variable, with the Exports of goods and services variable. For the Trade variable. We use secondary data from the world bank. Our research period is from 2007 to 2020. We use the following equation:

$Tr_t = \beta_0 + \beta_1 FDI_t + \beta_2 IGS_t + \beta_3 EGS_t + e_t$ eql 1

$FDI_t = \beta_0 + \beta_1 Tr_t + \beta_2 IGS_t + \beta_3 EGS_t + e_t$ eql 2

$IGS_t = \beta_0 + \beta_1 Tr_t + \beta_2 FDI_t + \beta_3 EGS_t + e_t$ eql 3

$EGS_t = \beta_0 + \beta_1 Tr_t + \beta_2 FDI_t + \beta_3 IGS_t + e_t$ eql 4

Description:

Tr : Trade

FDI : Foreign direct investmen

IGS : Imports of goods and services

EGS : Exports of goods and services

β : the magnitude of the effect of causality

e = Error term

t = Time period

eql: equation

Table 1. Variable Description

Variable	Explanation	Data type	Source
Trade	To calculate trade as a proportion of GDP, add up the value of everything sent out and everything brought in.	Percent	World Bank
Foreign direct investmen	To buy a long-term management position (ten percent or more of voting shares) in a firm operating in a country other than the investor's own is considered a kind of foreign direct investment. Investment capital is the sum of equity capital, reinvested profits, other long-term capital, and investment in short-term assets. Foreign investors' net inflows (new investment inflows minus disinvestment) are expressed as a percentage of GDP in this dataset.	Percent	World Bank
Imports of goods and services	Imports stand for the total monetary worth of anything of market value that is brought in from outside the country. Services such as communication, construction, financial, informational, business, personal, and governmental services are also included. Investment income (formerly known as factor services) and transfer payments are not included, nor is	Percent	World Bank

	employee compensation.		
Exports of goods and services	Exports are the monetary worth of whatever a country gives away to the rest of the world through the market. Services such as communication, construction, financial, informational, business, personal, and governmental services are also included. Investment income (formerly known as factor services) and transfer payments are not included, nor is employee compensation.	Percent	World Bank

Result and Discussion

Table 2. Root Test Results

Variabel	Unit Root	Statistics for the Augmented Dickey Fuller	Probability	Description
Trade (Tr)	Level	-1.399886	0.5615	Tidak Stationary
	First Different	-4.003710	0.0070	Stationary
Foreign direct investmen (FDI)	Level	-2.734896	0.0858	Tidak Stationary
	First Different	-4.469861	0.0026	Stationary
Imports of goods and services (IGS)	Level	-1.193270	0.6560	Tidak Stationary
	First Different	-3.907247	0.0110	Stationary
Exports of goods and services (EGS)	Level	-1.080188	0.7024	Tidak Stationary
	First Different	-3.937952	0.0104	Stationary

*the limit value used at the significance level of 0.05

Based on the findings shown on Table 2. The fact that Tr, FDI, IGS and EGS stationary data are not at the same level, so that the first differencing is put into action. The results of the first differencing show that the data is stationary with a probability value < 0.05. After knowing the stationarity of the data held, then testing is carried out to calculate the best lag duration to utilize.

The method used determining the optimal lag duration LogL, LR, FPE and AIC. The smaller the value of LogL, LR, FPE, AIC, the lag is the most optimum lag. The outcomes of the test are shown on the next table

Table 3. Maximum Lag Test

Lag	LogL	LR	FPE	AIC
0	-130.0828	NA	7.823307	13.40828
1	-73.49916	84.87548*	0.141100*	9.349916*

Table 3. Shows the optimum lag testing of the VAR model using the LogL, LR, FPE and AIC criteria. Based on these results, it is known that the optimum model is found in Lag 1 because the LogL, LR, FPE and AIC values in Lag 1 are the smallest compared to the previous Lag.

Table 4. Cointegration Test

Hypothesized at Most	Eigenvalue	Trace Statistic	0.05 Critical Value	Probability
None	0.560621	16.44786	27.58434	0.6275
1	0.341147	8.345086	21.13162	0.8814
2	0.240286	5.496277	14.26460	0.6783
3	0.089198	1.868594	3.841466	0.1716

* Max-eigenvalue test indicates no cointegration at the 0.05 level

The cointegration test results are shown in table 4 above explain that all probability value is above 0.05. It means all the probabilities are not significant. Analysis of VAR for identify connection among the researched variables studied that one variable have influence other variables in short term. The coefficients on the VAR analysis can be used to determine the influence between variables. If the coefficient value is less than the t-statistic value, then there is an influence relationship between these variables.

Table 5. VECM Estimation Results

	D(Tr)	D(FDI)	D(IGS)	D(EGS)
D(Tr(-1))	3.702674	-2.938889	1.030189	1.378545
	(3.38981)	(1.56605)	(1.64342)	(1.67882)
	[1.09229]	[-1.87663]	[0.62686]	[0.82114]
D(FDI(-1))	0.702899	0.435444	0.344311	0.322107
	(0.58912)	(0.27217)	(0.28561)	(0.29177)
	[1.19313]	[1.59992]	[1.20551]	[1.10399]
D(IGS(-1))	-7.868406	2.458257	-2.600099	-3.609161
	(5.02849)	(2.32310)	(2.43788)	(2.49039)
	[-1.56476]	[1.05818]	[-1.06654]	[-1.44924]
D(EGS(-1))	1.421337	3.883416	1.000924	1.368027

	(5.65407)	(2.61210)	(2.74116)	(2.80021)
	[0.25138]	[1.48670]	[0.36515]	[0.48854]
C	43.07406	2.080872	21.29264	18.77764
	(21.6584)	(10.0059)	(10.5003)	(10.7264)
	[1.98879]	[0.20796]	[2.02782]	[1.75059]

Considering what the VAR analysis revealed, could be said that relationship between Tr and Tr has a non positive significant impact because the coefficient value's at 3.702674, this value is more than the 1.09229 t-statistic's value. Insignificant correlation exists between Tr and FDI, meaning that the two variables are not related to each other because the coefficient value is at -2.938889 much more than the -1.87663 t-statistic value. The non significant correlation also found exists between Tr and IGS, because the coefficient value is at 1.030189 more than the 0.62686 t-value statistic, another unsignificant association between Tr and EGS was spotted, we found that the coefficient value is at 1.378545 more than the 0.82114 t-value statistic.

Conclusion

The positive significant impact between Tr and Tr, because the coefficient value is positive (3.702674) and larger than the t-statistic value (1.09229). This means that as Tr increases, Tr decreases, and this effect is statistically significant. The text also concludes that there is no significant correlation between Tr and FDI, Tr and IGS, or Tr and EGS, because the coefficient values are negative (-2.938889 and 1.030189) or positive (1.378545) and larger than the t-statistic values (-1.87663, 0.62686, and 0.82114). This means that there is no clear relationship between these pairs of variables, or that the relationship is too weak to be detected by the VAR analysis.

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