The Level of Integration in Central Asia and Azerbaijan

Abstract

The question of integrating into regional and global organizations/blocs is a pressing one for the countries of Central Asia and the Southern Caucasus. For that reason, I have analyzed the current integration level of these countries. The paper utilizes 11 economic, social and political indicators which later have been used to developed 5 indexes in order to measure the overall level of integration of six countries: Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. The results have implied that these countries are not integrated to the global economy in significant levels. Among them, the most integrated states are Kazakhstan and Kyrgyzstan whilst Turkmenistan and Uzbekistan take the last two places.

On the other hand, further analysis has shown that all of these countries, even the isolated Turkmenistan, still possess strong economic and political ties to the Russian Federation.

1. Introduction

Regional and Global Integration Agreements (RIAs and GIAs) have become progressively more popular starting from the 1950s. As growing number of agreements are made each year, similar to the other developing countries of the world, countries of Central Asia and South Caucasus (CASC, hereafter) also face the question of economic integration. In this regard, the CASC countries have three main potential ways to go: (a) remain relatively isolated (or neutral, in other words), (b) integrate into the Russian-led organizations and (c) integrate into the Western Economies.

The exact benefits and costs these countries may get from tighter integration are up for the debate. However, the effects of higher levels of cooperation also depend on certain characteristics of the integrating states. The same RIA may lead to profoundly different results for two signatory countries due to their inherent economic, social and political differences.

Apart from these characteristics, such as shared history, common language, similar institutions and etc., it is no secret that the degree of a country's integration to the regional/global economy prior to a RIA/GIA also affects the success of such schemes. For that reason, I aim to analyze the current level of integration of CASC to the regional and global economy.

2. Data and Methodology

Researchers have used numerous ways to quantify the level of integration. In this paper, I have decided to focus on 11 indicators, which will later be used to create 5 indexes. These indexes are: Trade & Development, Business Cycle, Connectivity, Tourism & Migration and Political Ties. In the following segment, you can see the 11 indicators and their explanations:

I. *Foreign Direct Investment (FDI)*: considering that the countries of CASC region are all economically developing countries, higher levels of integration should correlate with larger amount of FDI inflows. In that regard, I have used the net FDI inflows as a percentage of GDP for this indicator.

II. *Non-resource exports (NRE)*: as a rule, integration boosts exports due to trade creation that results after the resources are allocated more efficiently across countries in presence of less restricted trade. I have decided to exclude resource exports (such as oil for Azerbaijan/Kazakhstan/Turkmenistan, Gold for Kyrgyzstan and etc.) due to the fact that natural resources give an artificial advantage to the countries even when they are not integrated to the region/globe. For example, Turkmenistan, a country with minuscule level of integration to the regional/global economy has considerable levels of exports (relative to its GDP) due to its immense natural gas resources. After excluding resource exports, I have divided the remaining amounts by GDP.

III. *Average Tariff Rate (ATR)*[1] – Countries that look more favorably to integration schemes should naturally have lower levels of trade barriers, including tariffs. This indicator is calculated by finding the applied weighted mean of tariffs on all products.

IV. *Growth Rate Correlation (GRC)*: using the formula presented below, I have calculated the correlation coefficients between the GDP growth rate of CASC countries against that of the overall global economy, as well as Russian Federation and the European Union. Although the indicator does not measure the direct causation, it is a valuable tool to obtain the approximate view of the situation. For the calculation of correlation coefficient, I have utilized the Pearson's formula, presented below:

[1] The data on Average Tariff Rate of Turkmenistan is not publicly available. The last available information dates back to 2002, which is impractical for my research because comparing two values from 15 years apart is not appropriate.

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

In the formula, n represents our sample size whilst x and y are GDP growth of different countries and blocks. I have used annual growth rates between the years of 1991 and 2017.

V. *Direct Connections*: political and social ties between any two states can also be observed from the flow of the population. If countries A and B are more integrated, then there will be more citizens of A going to B and vice versa. Yet we should not forget that some of these crossings may be due to the transit travel arrangements (for example citizen of A going to country C via country B). Therefore, in order to exclude this bias, I have decided to use the total number of available routes to international destinations from each country. Considering that no country of CASC is a major air travel hub, using the air travel connections should eradicate the transit biasness. I have later divided this number by the population in order to have a more accurate index.

VI. *Logistics Performance Index (LPI):* LPI is an index developed by the World Bank in order to assess the quality of trade logistics of each country. The index takes into account the performance of customs agencies, quality of trade related infrastructure, ease of arranging international shipments, logistics services, the ability of tracking shipments and the overall timeliness.

VII. *Tourist Arrivals*: Countries that are more integrated into the global economy is likely to be more open and welcoming towards tourists. In this index, I have divided the number of Tourist Arrivals by the population. It is true that natural wonders and geographical location may be a source of bias here, but since all of these countries are landlocked and have no major tourist attraction, I believe that it would be appropriate to use the indicator.

VIII. *Personal Remittances:* Free movement of labor is one of the define characteristics of integrated states. In the case of CASC countries, this can be observed from the level of received personal remittances. As the indicator, I have used these remittances as share of GDP.

IX. *Number of Embassies Present Abroad*[2]*:* one of the ways to see the global political integration of a country is looking at the respective number of its embassies abroad. In this indicator, I have used the number of embassies of each CASC country.

X. *Number of FTAs:* Given that the political and economic relations among countries have developed sufficiently, they are likely to sign a trade agreement. Therefore, the number of Free Trade Agreements can be regarded as another indicator of integration.

XI. *Visa Free States*: another practical measure of the political relationship between two countries is the visa regime. If a country is politically more integrated towards the others, it is more likely that they agree on visa free regime. Therefore, I have used the number of states that a citizen can travel without a visa as another indicator of the integration.

Table 1: Indicators, their explanations and sources

Indicator	**Number**	**Explanation**	***Data Source***
Trade and Investment			
Foreign Direct Investment	I	Net FDI inflows as % of GDP	*World Bank*
Non-Resource Exports	II	Exports – largest mineral exports as % of GDP	*World Bank; OEC*
Average Tariff Rate	III	Weighted average of tariffs	*World Bank*
Business Cycle			
Growth Rate Correlation	IV	Correlation between GDP growth of two nations	*World Bank*
Connectivity			
Direct Connection	V	Number of international flights per capita	*Flightsfrom*
Logistics Performance Index	VI	Results of the Aggregated LPI survey	*World Bank*
Tourism & Migration			
Tourist arrivals	VII	Number of tourist arrival per capita	*World Bank*
Personal Remittances	VIII	Personal remittances received as % of GDP	*World Bank*
Political Ties			
Number of Embassies	IX	Number of Embassies in other countries	*Embassy Worldwide*
Number of FTA agreements	X	Number of bilateral and plurilateral FTAs	*Asian Development Bank*
Visa Free States	XI	Number of states with free visa regime	*Passport Index*

[2] Please be aware that I have only included the Embassies in this indicator, and not consulates and other diplomatic missions

After completing the data gathering and calculation of indicators, I had to bring them to a common scale because at its raw form, it was impossible to incorporate the 11 indicators into 5 indexes. For this purpose, I have used yet another simple but convenient statistical measure: Z score.

$$Z = \frac{x - \mu}{\sigma}$$

Z scores are calculated by dividing the difference between the value (x) and the mean (μ) by the standard deviation (σ). The resulting number may be negative or positive. The higher or the lower the Z score from 0, the further away is the value from the average of the data set. For our indicators, the Z scores vary between -1.63 and 1.83.

Table 2: Z scores of the Indicators

	Azerbaijan	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
I	0.71	-0.05	0.86	-0.69	0.79	-1.63
II	-1.02	0.59	1.55	0.03	-1.10	-0.05
III	0.16	1.08	0.91	0.23	-1.40	-0.98
IV	0.85	1.49	0.02	-0.54	-1.13	-0.69
V	1.07	0.54	0.77	0.00	-0.93	-1.45
VI	-0.03	1.83	-0.44	-0.96	-0.67	0.26
VII	-0.03	0.60	1.70	-0.74	-0.91	-0.62
VIII	-0.56	-0.72	1.32	1.25	-0.74	-0.55
IX	1.70	0.45	-1.08	-0.76	-0.39	0.08
X	-0.57	1.42	1.09	-0.46	-1.02	-0.46
XI	0.78	1.33	0.09	-0.32	-1.56	-0.32

3. Interpretation

When we take a look at the indexes, it is not difficult to observe certain clear patterns. Generally speaking, Turkmenistan is clearly the least integrated state to the global economy among the six of the countries

analyzed. The most integrated state, calculated as the average of indexes, is Kazakhstan. Now let us dig deeper and analyze countries one by one:

3.1.Azerbaijan

Azerbaijan's overall level of integration into the global economy is boosted by certain factors. For once, the country is the leader when it comes to the number of embassies represented abroad, with 67 in total. Azerbaijan also leads the list when it comes to the number of flights to international destinations, with one destination per 130,000 citizens. This number is reasonably lesser than the average of the data set, 222,200 citizens. Another noteworthy point is the growth rate correlation coefficient which equals 0.32. In international standards, 0.32 would not be regarded as a high value, but among the countries analyzed, this is the second largest.

Yet not all indicators are going as strong for the country. While Visa Free States and FDI Inflows have somewhat average numbers, same cannot be applied to the rest. Not being a member of WTO has translated into having considerably higher average tariff rate for Azerbaijan than the rest of CASC region. It also has negative Z values in Logistics Performance Index and Tourist Arrivals. Although personal remittances constitute 2.8% of national GDP for Azerbaijan, the corresponding Z value is diminutive because of Kyrgyzstan and Tajikistan whose economies receive a whopping 32.3% and 31.3% from remittances. Azerbaijan is also not a member of the Eurasian Economic Union (EAEU) which means it is not part of the many Free Trade Agreements signed by the organization and therefore has a negative Z score here as well. Lastly, Azerbaijan's worst performance comes in non-resource exports. When we exclude the mineral products, its non-resource exports equal a mere 2.5% of GDP, only slightly larger than 2.2% of Turkmenistan.

3.2.Kazakhstan

When looking at the average of indicators, Kazakhstan is the leader. It has the lowest level of Average Tariff Rate and highest levels of Growth Rate Correlation, Logistics Performance Index and Trade Agreements. It should be noted that the Z score of LPI, which equals 1.83 in case of Kazakhstan, is the largest value among the 66 values calculated. With 27 Free Trade Agreements, the country even surpasses the other member state of the Eurasian Economic Union, Kyrgyzstan, which has 24. While the Kazakh nationals can enjoy visa free travel to 38 foreign countries, its non-resource exports are doing far better than the other two fossil-fuel exporting countries of CASC, Azerbaijan and Turkmenistan.

The country has negative values in only two indicators: FDI inflows and Personal Remittances. Although Kazakhstan receives more net FDI inflows than any other country of CASC, its relatively large economy[3] means that in GDP terms the FDI inflows are not as high as other resource-rich CASC countries, namely Kyrgyzstan, Turkmenistan or Azerbaijan, whose corresponding Z values for FDI inflows are all above 0.7. Similar to Azerbaijan, Kazakhstan also do not gain any significant revenue from personal remittances.

3.3.Kyrgyzstan

Despite the fact that Kyrgyzstan is not the most integrated state, it leads the race in 4 indicators. With its population of 6.2 million, the country receives 4.6 million tourists per year, making it the most visited country among those analyzed, with the exception of Kazakhstan. Despite being rich with gold and other precious metal reserves, it also has a more diversified economy when compared to the rest of CASC. For instance, in the year of 2016, 11% of Kyrgyz exports constituted cars, trucks and vehicle parts, followed by textiles (10%), vegetable products (9.4%) and machinery (8.1%). In terms of personal remittances,

[3] Kazakh economy is 4 times larger than the second largest economy – Uzbekistan among the countries which I have analyzed

Kyrgyzstan is also the top-performer. The amount of personal remittances is so high to surpass the total exports of the country. The underlying reasons behind Kyrgyzstan's (and as we will discuss soon, Tajikistan's) soaring remittances can be generalized as: (a) Kyrgyzstan has significantly higher portion of working-age population than Russia (51% compared to 27%), which is where most of its workers emigrate to and (b) income gap between the countries (Russian GDP PPP per capita is almost 9 times larger than the same indicator of Kyrgyz Republic). And of course, the warm political relations between these countries also help to keep the remittances high.

As a member state of the EAEU, Kyrgyz Republic takes part in numerous FTAs. The country is also connected to 60 international destinations via air travel, which is better than one would expect considering the size of the population. Where it does not do so well is the Logistics Performance Index and the number of embassies, with only 26 embassies present worldwide.

3.4.Tajikistan

The economy of Tajikistan is clearly far less integrated into the global economy than the three previous countries discussed. Apart from Personal Remittances (due to same reasons as Kyrgyzstan: working age difference and income gap), Average Tariff Rate and Non-Resource Exports, the country has no other positive Z score. Tajikistan gets the worst score when it comes to Logistics Performance Index, reflecting the dire situation of the country's trade related infrastructure, customs authorities and etc. Although the negotiations are underway for Tajikistan being a member of the Eurasian Economic Union, not being member at the moment is also reflected in number of Free Trade Agreements the country has signed.

3.5.Turkmenistan

Turkmenistan is a special case when it comes to researching integration. It is now apparent that decades long of neutrality policy have successfully isolated the country from the international community on

economic, political and social levels. This is reflected in the fact that among the 11 indicators used for comparison, the country only has 1 value which is above zero. That Z score, equaling 0.79 belong to the net FDI inflows, largely thanks to the having one of the largest gas reserves of the world.

Turkmenistan scores quite low in almost all of the other 10 indicators. Particularly noteworthy here is the three indicators that make up the Political Ties index: Number of Embassies, Trade Agreements and Visa Free States. It is part of only 5 Free Trade Agreements and Turkmen nationals can travel to a mere 17 countries without a visa. It should also be pointed here that the country has the lowest Growth Rate Correlation with the World Economy, equaling 0.15.

3.6.Uzbekistan

Uzbekistan is the second least integrated state of CASC region. Surprisingly, the country does well in Logistics Performance Index, with a Z value of 0.26 it is only behind the leader Kazakhstan. The rest of the indicators, on the other hand, look grim for the country.

The country is, economically speaking, quite isolated. The Average Tariff Rate continues to be 8.7%, which is not surprising when one takes into account that Uzbekistan is not part of neither the WTO nor EAEU. Though it should be mentioned that unlike Turkmenistan, it has applied for the WTO membership and the accession process is currently underway. Additionally, the President Shavkat Mirziyaev has recently suggested Uzbekistan joining the Eurasian Economic Union (EAEU) in order to protect its access to some of country's largest export markets – Kazakhstan and Russia.

Uzbekistan's economy received very little investment, averaging 1.45% of GDP during the last five years, which is the smallest figure among sample of countries. It is in the bottom of the list when it comes to air connection, measuring 1 international destination per 348,000 citizens.

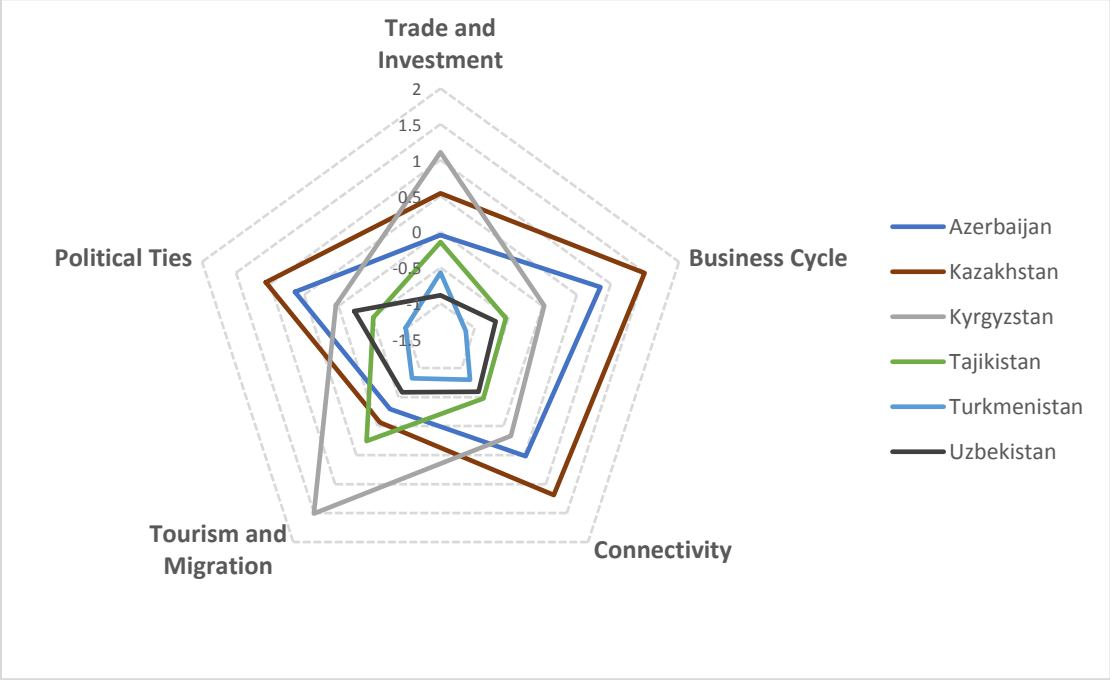
Once all the Z scores are calculated, they can be merged into 5 indexes. For those indexes that have more than 1 indicator, the final value of the index is determined as the average value of the indicators. The results are shown in Table 3 below. I later constructed a spider chart (graph 1) for more visualization.

Table 3: Indexes

	Trade and Investment	Business Cycle	Connectivity	Tourism and Migration	Political Ties
Azerbaijan	-0.05	0.85	0.52	-0.30	0.64
Kazakhstan	0.54	1.49	1.19	-0.06	1.07
Kyrgyzstan	1.11	0.02	0.17	1.51	0.04
Tajikistan	-0.14	-0.54	-0.48	0.26	-0.51
Turkmenistan	-0.57	-1.13	-0.80	-0.82	-0.99
Uzbekistan	-0.89	-0.69	-0.59	-0.58	-0.23

Source: Author's own calculations

Graph 1: Comparison of the Five indexes in CASC region



Source: Author's own calculations

The patterns in the spider chart above is mostly as we could expect. On indexes of *Business Cycle*, *Connectivity* and *Political Ties* the order of the countries almost remains the same: Kazakhstan,

Azerbaijan, Kyrgyzstan, Tajikistan/Uzbekistan, and Turkmenistan. Where these patterns disappear are *Trade and Investment* and *Tourism and Migration*. In the latter one, Kyrgyzstan and Tajikistan make a significant difference, boosted by these countries' remittances from Russia and also the fairly developed (in CASC standards) tourism sector of Kyrgyzstan.

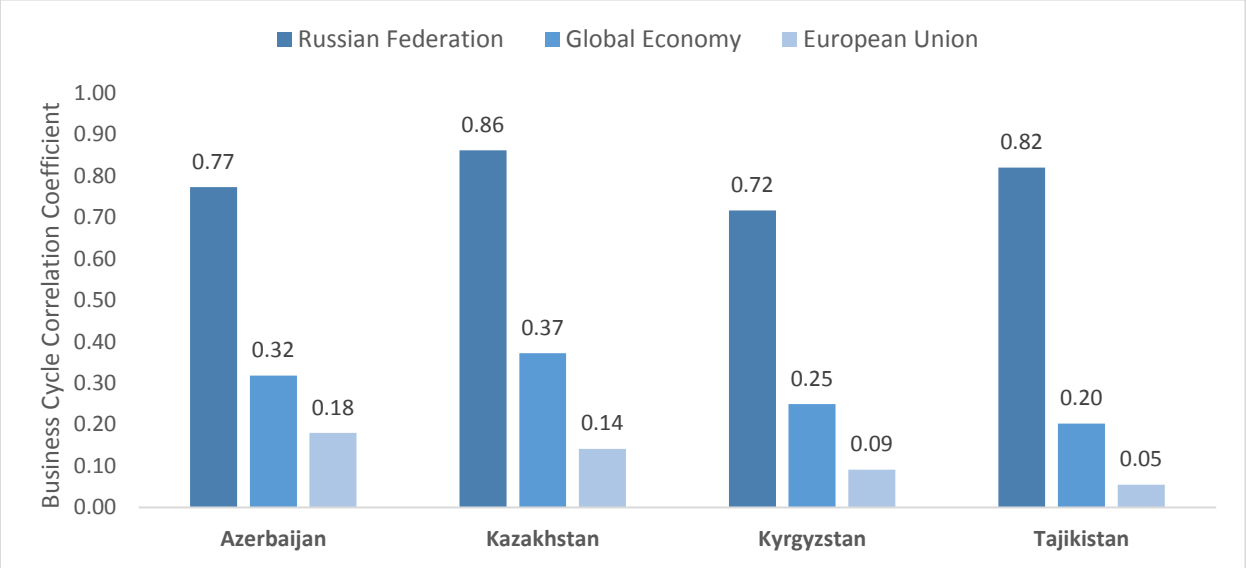
When it comes to the index of Trade and Investment, Kyrgyzstan once again stands out. Perhaps as a combination of its large gold reserves and recent investment treaties with China, the country has received significant foreign direct investment inflows. Yet it should be mentioned that a very small portion of these investments are greenfield investments, which raises questions about the sustainability of this trend in the medium and long term.

With the analysis above, we now know which countries of the CASC region are more isolated. Those titles primary belong to Uzbekistan and Turkmenistan. The last question to address is the direction of the integration of the relatively more integrated states.

We know that as post-Soviet countries, all of the CASC states are inclined towards Russia when it comes to economic ties. Although USSR does not exist anymore, its legacy when it comes to trade relations still persist. However, the current level of the economic relationships between Russia and CASC countries are not all the same either.

In order to further analyze the topic, I decided to use the same Business Cycle Correlation method and calculated the coefficient of the remaining four countries with Russia, European Union and the World. The results are presented on the Graph 2 below:

Graph 2: Business Cycle Correlation with Russia, EU and the World



Source: Author's own Calculations

What we observe is the clear fact that correlation between economies of CASC region and Russian Federation is significantly higher than that of the World Economy. Among the four countries that have left, Kazakhstan and Tajikistan are the ones with more integration towards Russia and Russian-led organizations. Despite being a member state of the Eurasian Economic Union and having enormous remittances from Russia, the correlation coefficient of Kyrgyzstan is not as high as the others. With 77% correlation, Azerbaijani economy too still holds its close ties with the Russian Federation. The clear contract between the coefficient for Russian Federation and the coefficient for European Union once again demonstrates that these countries still have long way to go when it comes to integration towards the Western organizations.

4. Conclusion

By using 11 indicators on social, economic and political level and developing 5 indexes I have first analyzed the overall level of global integration of the six countries.

The coefficient of Business Cycle Correlation of the sample countries with the global economy ranges between 0.15 to 0.37, meaning that the overall region of Central Asia and South Caucasus is not well integrated into the world economy.

The most integrated state, Kazakhstan does well in almost all of the indicators. It has the lowest Average Tariff Rate and highest scores in Growth Rate Correlation, Logistics Performance Index, number of Free Trade Agreements and Visa Free Regimes. It is apparent that on economic, political and social levels Kazakhstan is the leader country in pursuit of regional/global integration among the six countries analyzed.

When it comes to Azerbaijan and Turkmenistan, we observe the adverse effects of the Dutch-disease, reflected in soaring Average Tariff Rates, minuscule non-resource exports and not being member of international/regional trade institutions such as World Trade Organization and the Eurasian Economic Union. Being isolated from these organization is also applicable to Uzbekistan, but that may change as the country discusses the possibility of joining the EAEU. On the political level, however, Azerbaijan and Turkmenistan are quite different, perhaps mainly due to latter's decades long isolationist policies which can be observed from indicators such as number of embassies in foreign countries, visa free states and so on.

When talking about Kyrgyzstan, we first need to mention its relative success in tourism industry, with getting 0.74 tourists per citizen each year, clearly the highest number among its peers. Kyrgyzstan's (and similarly, Tajikistan's) "push" for regional/global integration comes in the form of received personal remittances. These remittances are so high that, in both of the cases, they surpass the level of exports. The underlying reasons can be summed as the difference in working age population, income gap and the solid relationship these countries have with the Russian Federation.

What these countries lack is the global integration, however, they make up for it in integration towards the Russian Federation and Russian-led institutions. Even the most isolated country in our list, Turkmenistan has a correlation coefficient of 0.66, which is almost twice as much as the Kazakhstan's coefficient with the world economy.

The paper concludes that among the countries which have been analyzed, Kazakhstan and Kyrgyzstan are the most integrated ones whilst Uzbekistan and Turkmenistan take the last two places. Despite the fact

that these countries only have meager level of global integration, they all still have strong economic, political and social ties to the Russian Federation as a remnant of the Soviet times.

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