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ANALYSIS OF CENTRAL ASIA ECONOMIC INTEGRATION PROJECTS FROM THE VIEWPOINT OF CONVERGENCE HYPOTHESIS

*Analiza projekata centralno-azijske ekonomske integracije iz
ugla konvergencije hipoteza[∇]*

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Abstract

In this study, Eurasia Region integration process will be investigated in theoretical and empirical terms. Potential impact of economic integration will be evaluated in the context of what needs to be done for successful integration. At this stage, a comparison will be drawn between the EU and the integration in the Eurasia. Later, an econometric analysis will be performed in the study; whereby Central Asia Economic Integration projects will be analyzed separately, and attempts will be made to demonstrate the results of the projects within the context of convergence hypothesis. After these, some solution proposals for integration will be presented.

Keywords: *International Integration, Eurasian Union, Developing countries*

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1. Introduction

The political outlook of the Central Asia has changed due to the new regional players emerging as of 1992, and this has directed the perception of international powers to the region. The reason for this is not only the history of the region, but also the potential and significant energy resources it houses geopolitically. Since Central Asian countries have undergone a historical isolation process, they engage in integration efforts with the world at various levels. This integration process is diversified with various regional and international actors (Sadri, 1997: 573).

This study, along with this ongoing process, is limited to the analysis of potential and actual cases of integrations in the Central Asia. The possible situation that will emerge if Russia, a regional and global power, and the Turkic Republics in the region embark on an economic integration was comparatively analyzed in dollars (\$) by GDP per capita based on the purchasing power parity. To this end, the incomes of the countries which participated in the successful or failed integration projects implemented in the region (CIS, EurAsEC-5, EurAsEC-3, SES-4, CA-4) were assessed from the standpoint of economic convergence theory. For this assessment, what needed to be done for the success of intergovernmental integration processes, and existing models of integration were demonstrated.

2. Theoretical Background (Economic Integration Process)

Economic integration is used to define an intergovernmental organization (IGO) created by and among three or more countries, marked by their wish to create benefits for member countries with the greater and open economy they have established. Theoretically, economic integration requires the following cooperation processes to be conducted among member countries. Certain conditions need to be fulfilled for the success of the integration process. Consideration of these conditions at the beginning of the union-building process will stand as a precaution against possible risks. We can list such conditions as follows (Kyambalesa and Houngnikpo, 2006: 10-12);

- a. Peace and stability
- b. A sustainable political will
- c. Competitive economies
- d. Being at a common economic development stage:
- e. Geographical proximity
- f. Pre-international trade relations, high trade barriers before the integration, low trade barriers after the integration
- g. A high number of countries
- h. Sharing gains and losses
- i. Equitable distribution of institutions

In the Soviet era, it was ensured that Central Asian countries would be specialized in different modes of production, complementing each other in economic terms. This situation resulted in some countries to be strengthened in branches like industry, but left some others in less competitive and weaker positions in the post-Soviet period. The status of Central Asian countries with a relatively higher economic power make them more attractive compared to the weaker countries. This creates a disadvantageous situation for the less developed countries and stands as another hindrance to integration. Furthermore, the similarity of economic systems among the

countries that will engage in cooperation, and the existence of specialization will enhance the trade volume among the countries. The high trade barriers to be implemented before integration and the low trade barriers to be implemented thereafter will have a revitalizing impact on trade in the post-integration period, and strengthen the faith in the integration. However, it should also be considered that low trade barriers and customs taxes would pose economic risks with the fall in the prices of export articles.

These cooperation processes can occur in various forms. In Table 1, the first four of types of integration are defined as shallow integration, and the last three of them are defined as deep integration. Shallow integration only includes issues like border relations, tariffs and quotas, whereas deep integration goes beyond border relations and entails the alignment of economy, politics and institutions among member countries.

Table - 1. Cooperation Processes in Economic Integration

Shallow Integration	Preferential Trade Agreements	With preferential trade agreements, participating countries scale down barriers for the movement of goods in their trade with each other/the promotion of trade
	Free Trade Areas/ Regions	In this case, customs/trade barriers are removed completely, and member countries can pursue separate trade policies with nonmembers.
	Customs union	Member countries completely remove trade barriers among themselves, and adopt a common external trade policy with all nonmembers.
	Common Market	All barriers to the movement of trade goods and services are removed in addition to the customs union.
Deep Integration	Economic Union	Member countries go beyond a common market by establishing common economic institutions governing the economic relations among the countries and coordinate the economic policies.
	Monetary Union	In addition to the requirements of an economic union, member countries adopt a common currency and establish a supranational central bank.
	Political Union	Cooperating countries in a monetary union ensure cooperation in political, central and local policies.

Source: Gerber, 1999: 210–211, 223– 31.

3. Comparison of the Central Asia Integration Process and the European Union Integration Process

The aftermath of the collapse of the Soviet System witnessed stability and structural adjustment policies to be proposed in Central Asian countries, namely the transitional economies, by international organizations, first and foremost the IMF. However, the general circumstances of these economies were quite different from the developing countries that would be a member of the European Union later on. Unlike Central European countries such as the Czech Republic, Hungary, Poland, Romania, etc., which had certain advantages due to their proximity to Europe; Central Asian Turkic Republics had different initial conditions. The most important feature of these countries inherited from the Soviet era was that each of them was part of a certain division of labor within the system. However, this situation hindered the self-sufficiency

of these countries after they gained their independence, which caused countries that are poor in natural resources like Kyrgyzstan, Tajikistan, and Uzbekistan to have weak economies (Doğruel and Doğruel, 2012: 103-104).

European Union Integration Process, on the other hand, is a remarkable role model for successful regional forms of integration. The organization, which was established as the European Coal and Steel Union in the 1950's, was initiated in order to create a free trade area in the heavy industrial zone of Alsace-Lorraine located at the French-German border. Despite many challenges, the integration achieved larger and deeper unification compared to other regional agreements. There are several reasons why the integration process, which is still continued despite the crisis and challenges faced within the European Union, has a lower chance of success in Central Asia (Sadri, 1997: 574-5, Bhatti, 2008: 60);

- a) Supranational organizations, civil society organizations, and non-governmental interest groups in Europe have had a quite strong impact on the construction of a more integrated society. However, in Central Asia, there is neither a supranational structure above regional powers, nor civil society organizations that can exist independently and support integration.
- b) Central Asian countries have recently gained independence; therefore, they do not want to transfer it to an upper organization, be it weak or strong, unlike the regional integration cases in Europe or Northern America. This limits the impact of their utilization of expansion and scale economies.
- c) When integration efforts were initiated after the Second World War, there was not any hegemonic power in Europe like Russia. Although it has been more than 20 years since the countries of the region gained independence in 1991, Russia has increased its political and economic capacity in the region by day.
- d) Integration efforts in Europe were initiated with a view to eliminating the origins/causes of the war/problems between France and Germany and reconstructing Europe from scratch. The idea of integration in Central Asia was born with the collapse of the Union of Soviet Socialist Republics.
- e) The closeness of European countries in terms of culture, religion and lifestyle paved the way for the union. However, in Central Asia, Islamic origins culturally separate these countries from Christian Russia.
- f) European countries were at a similar level of economic development and stable before integration. However, there are tremendous differences between CIT countries and Russia. Besides; Kazakhstan and Uzbekistan are more developed than Kyrgyzstan, Tajikistan and Turkmenistan. For this reason; these countries are in competition rather than complementing each other within an integrated union.
- g) Large European countries have mostly lost their foreign colonies/dominions after the Second World War, and their economies were considerably weakened by post-war conditions. They regarded integration beneficial in terms of politics, security and economy due their loss of power. The decline of European imperialism forced European forces to improve bilateral relations. However, in the case of CIS, the countries gained independence as opposed to losing power.
- h) Furthermore, given the war environment in the Afghanistan region; Central Asia acts as a buffer for Russia. Therefore, Russia may prefer supporting these republics to integration in order to preserve their stable position.

These basic questions require a definition for the integration desired in Central Asia that is different than the European Union or the Western ideology in broader terms. This is because the current definitions of integration fail to adequately explain the process in the Central Asia.

As it was stated among the conditions for successful integration, there should be equality or proximity among member countries in economic terms above all. Differences among the developing transitional countries, relatively poor countries and the richer countries of Central Asia pose a significant obstacle in this regard.

Furthermore, if there will be any kind of unification in place, it is frequently said that an equal and balanced distribution of power should be ensured. The fundamental purpose is if there is unification, the countries should enjoy equal rights with Russia. These countries wish to participate in organizations like ECO** only in line with their own needs, and do not embrace an idea of a larger union. This kind of behavior is quite natural and understandable for relatively young states with a quest for a new geopolitical position. The leaders and researchers of these countries are aware that the countries are not independent from Russia in economic terms. The historical influence of the Soviet Union is still felt by Central Asia (Damcı, 2014: 36). The reason for participating in the organizations such as ECO is to develop policies that would stand as an alternative to the hegemony created by Russia. Thus, the most remarkable foreign policy strategy pursued by the fragile economies of the Central Asia is to access international trade markets independently of the influence of Moscow (Sadri, 1997, 577-578).

Russia experienced a type of transformation different than Central Asian Republics. After the collapse of the Soviet Union of Socialist Republics, Russia first set its sights on the Western world; but it directed back its attention to enhancing its relations with the Central Asian Republics due to the suspicious and remote attitude of the West. The primary policy of Russia at this initial stage was to avoid conflict with the West as much as possible. Choosing to remain weak and avoid conflict with the West, Russia was able to improve its economy and regional unity in the new period. Thinking that a possible instability in the Eurasia region would reverberate in its domestic environment, Russia decided that more equitable relations with Central Asian Republics would be more advantageous for itself after the financial crises; and therefore, it has been able to mention integration on a more equitable relation platform as of 2001 (Bhatty, 2008: 45-60). With the resurgence of Russia, and the structure established by the Central Asian Turkic Republics taking hold, the idea of establishing a union came to prominence again, but this time on an equal level.

4. Econometric Methodology

Convergence hypothesis has its origins in the basic Solow (Solow, 1956) model. According to the assumptions of this model, countries with a relatively higher rate of savings will have a higher level of income compared to the countries with a lower rate of savings. Additionally, countries with a higher rate of population growth will have a lower level of capital per worker in steady-state.

**Economic Cooperation Organization (ECO) is one of the important integration efforts in which Turkey participates. IT was established in 1985 with its headquarters in Tehran. Turkey, Iran and Pakistan were the founding members of this organization. Later on, Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Tajikistan and Turkmenistan became members of this organization.

The Solow (1956) model has two predictions produced by the dynamics of convergence to steady-state. According to the Solow model, among the countries with the same structural features, same state of technology-production function, same investment limit, same population growth limit and same depreciation limit, and thus the same steady-state; the poorer countries (countries with a lower output per capita) catch up on the richer ones at the common steady-state by growing faster than them. This situation is called the absolute convergence hypothesis of the Solow model. The technological levels, saving rates, population growth rates of countries around the world are quite different than each other. In this case, a correlation cannot be expected among countries between the growth rates and the initial income levels. This kind of situation is also in line with Solow's absolute convergence hypothesis.

The second prediction of the Solow model that relies on the fact that countries have different features and thus different steady-states in real life addresses the differences among the real growth rates attained in transition periods. In this context, the further a country is from its own steady-state, the faster it will converge to its steady-state. This situation is called the conditional convergence hypothesis of the Solow model. According to the conditional convergence hypothesis, poorer countries do not necessarily grow faster than richer countries, and poor countries do not necessarily catch up on richer countries (Ünsal, 2007, 160-161).

The results of the important studies conducted by Barro and Sala-i Martin (1991) on convergence among countries indicated that countries that were poor based on their income per capita had higher growth rates. The convergence analysis that explains this mechanisms is essentially based on two criteria. The first criterion used for this is the Beta convergence measure. Accordingly, incomes per capita of countries converge independently from their initial incomes in the long run.

Beta convergence emerges when there is a negative correlation between the real GDP (GDP per capita) and the average annual growth rate. This shows that poor countries grow at higher rates than rich countries. It follows that if a country starts with a lower income per capita on average, it may witness a higher increase in its income compared to other countries and catch up on other countries at the end of period T. If all other variables are kept constant and there is still a negative correlation, then the beta convergence condition is met.

We can suggest that Beta convergence occurs when an underdeveloped country (with lower GDP) grows faster than a developed country (with a higher GDP per capita). In our study, we performed the cross section analysis which was also implemented by Rapacki and Prochniak (2009) in order to detect absolute convergence. The regression formula we used to predict Beta convergence is as follows:

$$\frac{1}{T} ((\ln y(T) - \ln y(0))) = \alpha_0 + \alpha_1 \ln y(0),$$

$y(T)$ refers to the GDP per capita calculated by the purchasing power parity (PPP) pertaining to the final year of the measurement period; $\ln y(0)$ refers to the initial GDP per capita (PPP); and T+1 refers to the number of years evaluated in the study. The negative α_1 calculated in our equation points to the existence of β convergence. With this definition, the β coefficient we derived from the Solow model (Solow 1956, Mankiw et al., 1992) will give us the convergence rate (Yorucu, 2013: 260):

$$\beta = -\frac{1}{T} \ln(1 + \alpha_1 T).$$

According to Rapacki and Prochniak (2009), beta convergence investigates whether the country with the lower GDP per capita would grow faster than and catch up

on the other one that has the higher GDP per capita. Hence, a positive beta coefficient will give us the number of years required for the regional income gap to be cut in half. For instance, in a region with a β coefficient of 2%, the period required for the regional growth gap to be cut in half is 35 years. The second type of convergence process (Sigma (σ) convergence) deals with the income distribution among countries or regions. This type of convergence, which is defined as σ convergence, proposes that the standard deviation of income per capita decreases continuously. β convergence is a necessary but insufficient precondition for the existence of σ convergence (Paas et al., 2007, p.12), whereas the opposite does not hold true. That is to say, the existence of σ convergence is not a precondition for β convergence. This is because economic shocks or crises are possible, which would cause economies to diverge from one another over time (Jones, 2002, p. 28).

However Baro and Sala-i Martin (1991) maintain that the difference among the real national income per capita figures of countries tend to diminish over time. If poor countries have a higher human capital per capita, they could eventually catch up on rich countries. We use the following regression formula to detect the existence of σ convergence:

$$sd(\ln y(t)) = \alpha_0 + \alpha_1 t.$$

$sd(\ln y(t))$ refers to the standard deviations of countries' GDP per capita logarithms in years ($t=1,2,..$). A negative α_1 calculated in the model suggests the existence of σ convergence. Countries converge when there is a decrease in the per capita income distribution of countries. Since this convergence relies on the income distribution among countries and regions, the distribution of the income in a country should be measured accurately. The fundamental measure of distribution in statistics is standard deviation. To elaborate, let's assume that the incomes per capita of poor and rich countries range between 1000 USD and 20000 USD. If in the following years, rich countries enter into economic stagnation and poor countries grow rapidly, and the income ranges from 10000USD and 17000 USD in 2010; the standard deviation will be smaller and the distribution of income per capita will be closer compared to 1990.

We used absolute Beta (β) and Sigma (σ) convergences in our study to determine whether any convergence or divergence of income occurred among the income levels and growth rates of the countries that are likely to engage in a future integration in the Central Asia after the collapse of the Soviet Union.

5. Analysis of Central Asia Economic Integration Process with Convergence Hypothesis

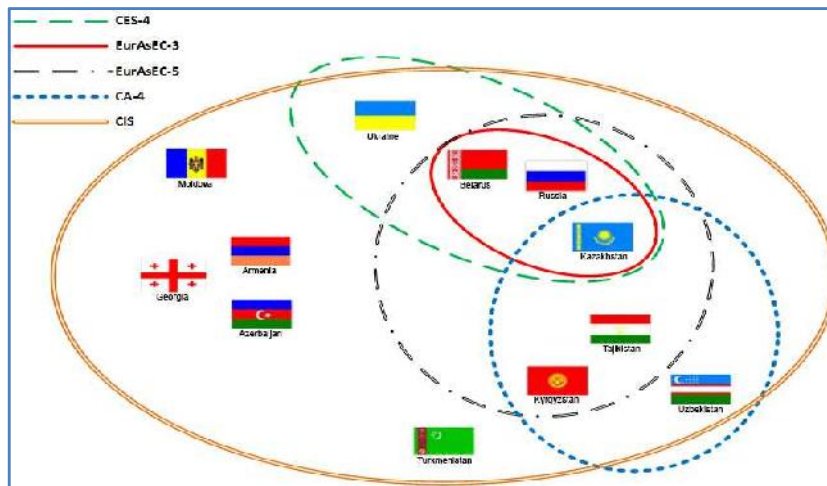
In our calculations covering the period 1993-2013; countries from all attempted integration projects, successful or failed; such as CIS, EurAsEC-5, EurAsEC-3, SES-4 and CA-4 (shown in figure 1) were assessed separately^{††}. First, the period 1993-2013 was tested, and then, periods 1993 – 1997 and 1998 – 2013 were tested as two sub-periods due the situation emerging after the 1997 Asian crisis. Regression results regarding these calculations are shown in Table 2 -11. The columns of these tables present the periods analyzed, the regression coefficients, t-statistics, p-values, R^2 value, results on convergence (if α_1 value is negative, there is convergence, therefore it is stated as 'yes'; whereas divergence is stated as 'no') and the β coefficient as

^{††} The change in the GDP (PPP) levels of the countries at the beginning and end of the periods are given in Annex 1, Table 1 and 2.

convergence rate and whether σ convergence occurred or not. The GDP per capita calculated by the purchasing power parity was obtained from World Bank data.

With the assessment of this situation, the photograph that has emerged as of 1991 will be presented, and some implications will be drawn as to the potential economic developments in the future.

Figure - 1. Post-Soviet Era Integration Initiatives - Venn Diagram



Source: Vinokurov, 2010: 26.

a) CIS-12 Countries

Almaty Declaration was signed by the countries that became independent on 21 December 1991, and the membership of these countries in CIS (Commonwealth of Independent States) was approved. Two years later, Georgia joined the union. At this point, all the countries which were previously within the Soviet Union joined the CIS except for Baltic States. The agreement laying the foundation of an Economic Union to be established among these countries were signed in September 1993 in Moscow. Trade barriers among members were removed with the free trade agreement signed in April 1994, which brought a new dimension to integration. However, the free trade agreement could never be fully implemented. Therefore, commercial transactions among CIS members were regulated by bilateral agreements, and trade integration was implemented sporadically. As a result, it is not possible to talk about neither a free trade regime, nor a customs union within CIS (Suskho, 2010: 120-2).

The results of our regression analysis covering the 12 CIS countries were given in table 2 and graph 1 (β convergence); table 3 and graph 2 (σ convergence). The results given in table 2 suggest that CIS countries do not display a growth tendency consistent with β convergence hypothesis. Economies with a higher GDP per capita in 1993 exhibited a growth performance above average in 1993-2013, whereas the countries with a lower GDP per capita remained below average.

In the CIS group, countries which had lower levels of income at the beginning of the period such as Armenia and Georgia; and the countries with relatively higher levels of income such as Azerbaijan, Belarus and Russia attained the fastest growth. By contrast, countries with a low income at the beginning such as Tajikistan, Kyrgyzstan and Uzbekistan had a lower growth performance compared to the countries which had a

higher level of income. Despite the positive trend in the period 1993-2013, results related to convergence were not significant ($p=0,949$), which was confirmed by a R squared value close to 0.

Table - 2. Regression results of β convergence for CIS12

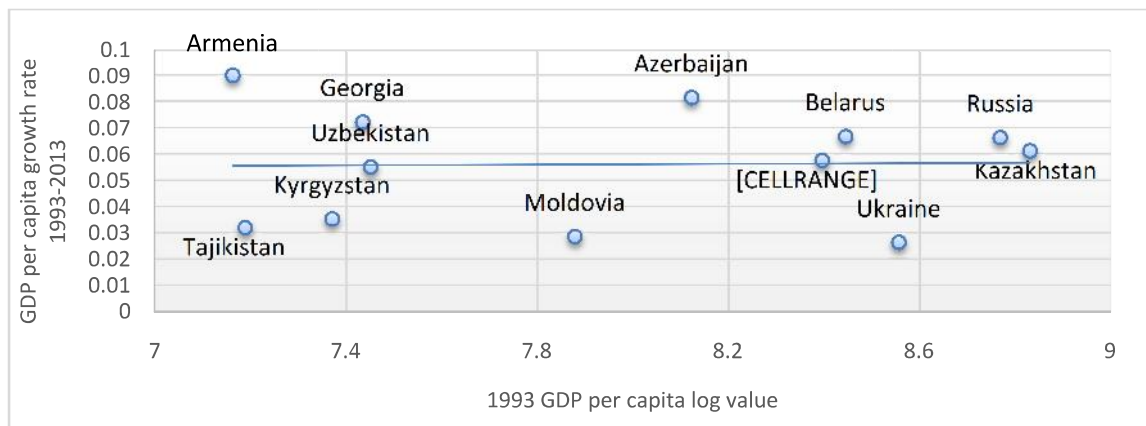
Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R^2	B conv.	β
1993-2013	0,0504	0,0007	0,5914	0,0653	0,567	0,949	0,0004	No	
1993-1997	0,2160	-0,0309	0,8489	-0,9712	0,416	0,354	0,0862	Yes	0,0330
1998-2013	-0,0285	0,0138	-0,4174	1,6009	0,685	0,141	0,2040	No	

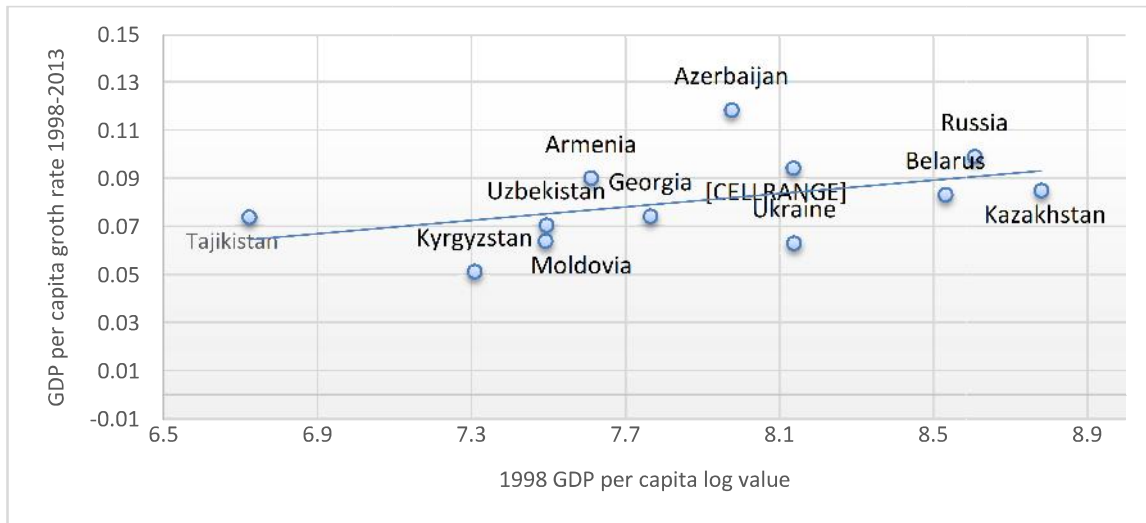
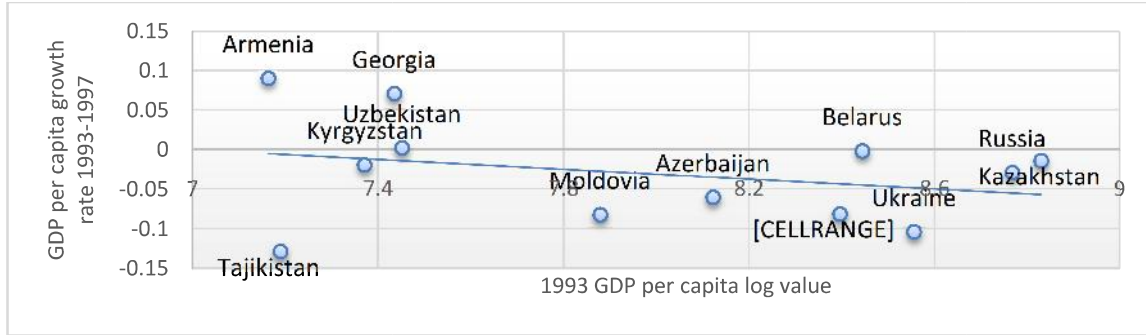
Table - 3. Regression results of σ convergence for CIS12

Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R^2	σ conv.
1993-2013	0,5757	0,0107	53,837	11,665	0,000	0,000	0,8775	No
1993-1997	0,6210	-0,0048	80,27	-1,504	0,000	0,229	0,4301	Yes
1998-2013	0,5373	0,0134	36,912	12,239	0,000	0,000	0,9145	No

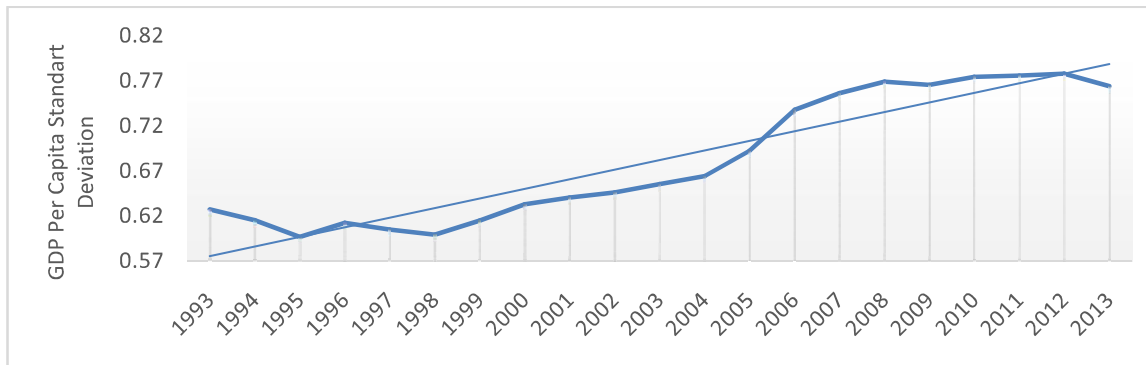
The growth performance of CIS countries does not validate the existence of β convergence in the sub-periods either (1993-1997, 1998-2013). All in all, the R squared value close to 0 calculated in the sub-periods shows that there is not a significant correlation among growth rates. That is to say, initial income levels could not be associated with growth rates. The lack of a correlation between initial income levels and growth rate is also shown in graph 1. Graph 2 shows that the income gap among the GDP per capita of CIS countries tends to rise in 1993-2013. It can be inferred that σ convergence did not exist among the countries in this group in the specified period. Although income gaps tended to diminish in the period extending from systematic transformation to the Asian crisis (1993-1997), these gaps took an upward turn again after 1998 peaked in 2012, and suffered from a slight decline in 2013.

Graph - 1. CIS Countries β Convergence Graphs





Graph 2. CIS Countries σ Convergence (divergence) Graph



b) EurAsEC Countries

It is fair to say that the efforts aimed at creating an economic union in broader terms could never succeed. Nevertheless, the Eurasian Economic Community (EurAsEC) established by Belarus, Kazakhstan, Kyrgyzstan, the Russian Federation and Tajikistan in 2000 stands as a very successful unification initiative despite its narrow scope. With the Eurasec-3 created in the framework of this union and the agreement signed by Kazakhstan, Russia and Belarus; the integration, which started up as a customs union in 2010, was upgraded. This union is likely to expand with Kyrgyzstan, Tajikistan and Armenia (Öngel, 2010: 87). The customs union protocols created among

Kazakhstan, Russia and Belarus include several agreements ranging from tariffs and quota practices to import and export regime arrangements (Krotov, 2011: 132-3).

The idea of creating a Eurasian union after the collapse of the Soviet Union attracted a great deal of interest by a circle of ideologists, politicians and academics. This organization, which was established unsuccessfully under the name of Commonwealth of Independent States, was finalized successfully in January 2012. Hence, a third customs union structure (Eurasec 3) was presented with the aim of removing all barriers to all commercial, financial and labor movements among Kazakhstan, Russia and Belarus in theory. Politicians have adopted a strong discourse, saying that his union would transform into full economic integration like the European Union by 2015. EurAsEC-3 (includes Russia, Belarus and Kazakhstan) agreement was signed in 2007, resulting in the formation of a Customs Union Commission (CUC) with a potential to transform into integration. After this agreement, another agreement was signed in December 2008 in relation to the customs regime and procedures (Hartwell, 2013:411-412).

The regression results of the convergence hypothesis regarding EurAsEC-5 countries (Russia, Belarus, Kazakhstan, Kyrgyzstan and Tajikistan) are shown in table 4 and graph 3 (β convergence); Table 5 and Graph 4 (σ convergence).

Table 4 indicates that EurAsEC-5 countries were in complete divergence in terms of economic growth in 1993-2013 according to the β convergence hypothesis. It was observed that Tajikistan and Kyrgyzstan, which had low income levels in the initial period, lagged far behind Kazakhstan, Belarus and Russia, and they diverged rather than converged. In this period, the trend line had a quite positive slope, had a high level of significance ($p=0.01$) and the R squared value accounted for 91% of the result.

Similarly, despite the formation of positive sloping trend lines in interim periods (1993-1997, 1998-2013), Kyrgyzstan lagged behind Kazakhstan and Belarus although it had attained a relatively higher growth in the transformation process in terms of the β convergence hypothesis compared to Tajikistan and Russia in the period 1993-1997. It is seen that the countries in this group had negative growth in this period. It was found that these countries, which suffered from a negative economic impact in the period extending from post-Soviet era until the Asian crisis, could not converge to the high-income countries after the crisis.

Table 5 and Graph 4 exhibit the evolution of the income gap among EurAsEC-5 countries. However, σ convergence could not be observed at a high significance level ($p=0$, R squared 94%). From 1993 to 2013, the income gap among the countries widened gradually. The income gap, which was at the lowest level in 1993, peaked in 2012, and experienced a slight decline in 2013.

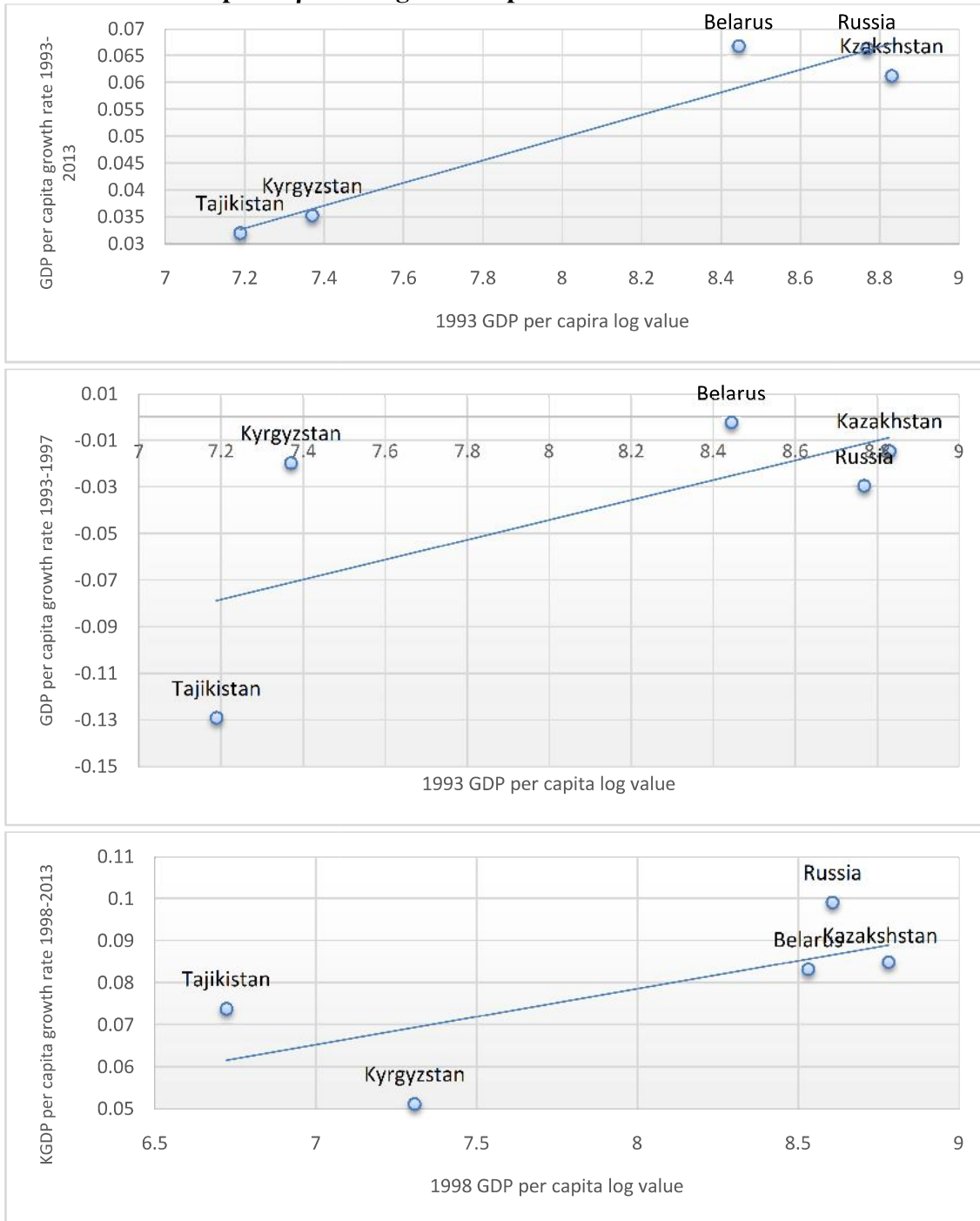
Table - 4. Regression results of β convergence for EurAsEC-5

Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	B conv.	β
1993-2013	-0,1183	0,021	-4,030	5,830	0,028	0,010	0,919	No	
1993-1997	-0,3850	0,0426	-1,65	1,487	0,198	0,233	0,424	No	
1998-2013	-0,0278	0,0132	-0,4298	1,649	0,696	0,198	0,476	No	

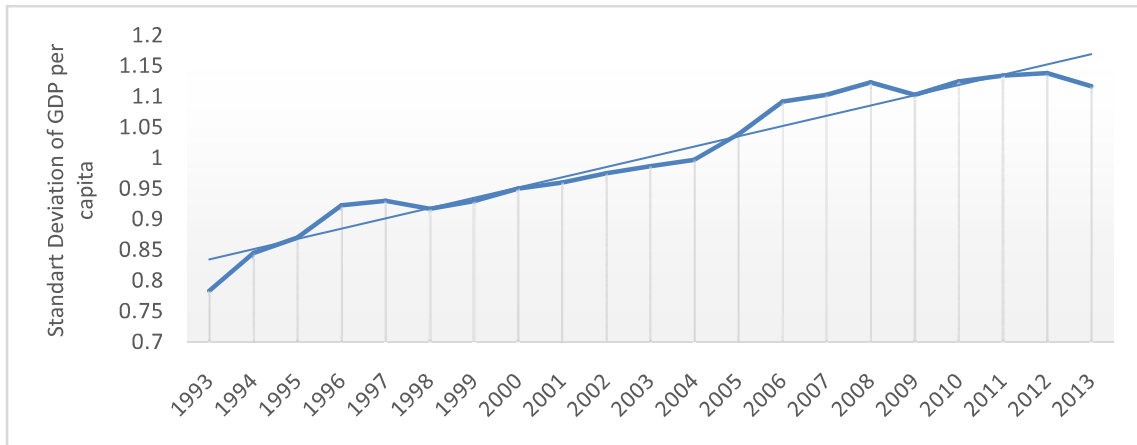
Table - 5. Regression results of σ convergence for EurAsEC-5

Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	σ conv.
1993-2013	0,8351	0,0167	75,713	17,715	0,000	0,000	0,943	No
1993-1997	0,7965	0,0371	64,712	7,3799	0,000	0,005	0,948	No
1998-2013	0,8381	0,0164	48,325	12,624	0,000	0,000	0,919	No

Graph - 3. β Convergence Graphs For Eurasec-5 Countries



Graph - 4. σ Convergence (Divergence) Graph For Eurasec-5 Countries



Macroeconomic indicators suggest a form of integration among Belarus, Kazakhstan and Russia. However, it is necessary to have harmonized monetary and currency policies for real and deep integration. Russia is more integrated with the world in financial terms, but this does not apply for the other countries. International Monetary Fund (IMF) states that there is limited financial sector integration among CIS countries because of Ukraine and Kazakhstan (Hartwell, 2013, 413). The regression result of the convergence hypothesis concerning EurAsEC-3 countries (Russia, Belarus, and Kazakhstan) are shown in table 6 and graph 5 (β convergence); table 7 and graph 6 (σ convergence).

We can say that the average growth rates of EurAsEC-3 countries converged, and there was a negative correlation between their growth rates and initial income levels pursuant to the β convergence hypothesis in the period 1993 -2013 (Table 6). A negative sloping trend is also seen in graph 5. The results of the model in which the R squared coefficient remained at 46% are not significant due to the high p value ($p=0.524$). The fact that Russia had a higher growth average unlike the lower growth expected from convergence disrupts the significance of the convergence hypothesis. We see similar results in the interim periods as well. In table 6, although its existence is predicted from β convergence, significant results cannot be reached due to the high probability values. The higher growth rate of Kazakhstan compared to Russia in the period from 1993 to 1997, and the low growth profile of Belarus in the period from 1998 to 2013 point to the fact that convergence was not fully attained.

From the standpoint of a σ convergence, the income gap among ErAsEC-3 countries took a downward turn in the period 1993 - 2013. Accordingly, although the income gap among countries declined seriously in the period 1993 – 1997, it spiked in the period 1998-2003. The downward trend was resumed after 2003. However, the p value (0.16) of the coefficient does not seem to be significant at the 10% significance level.

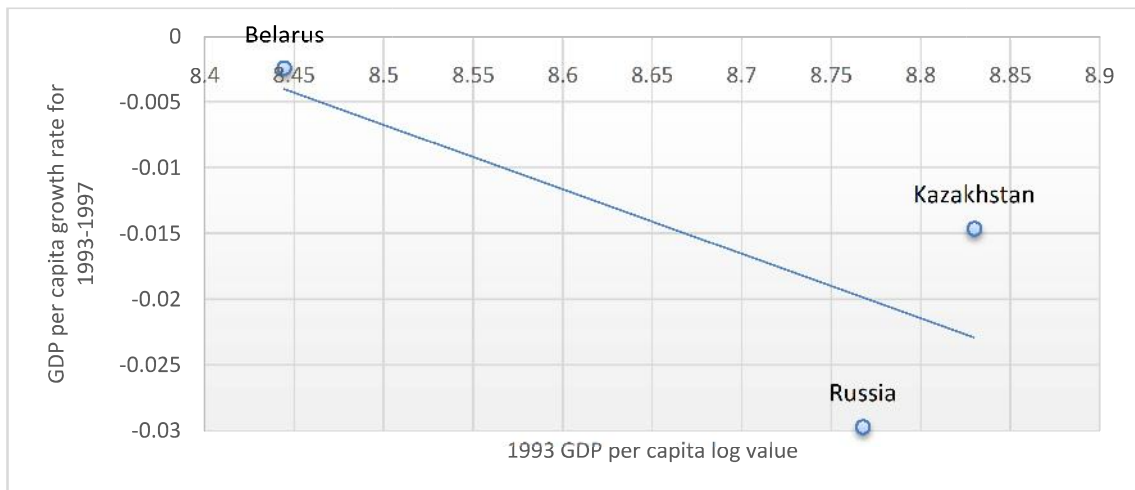
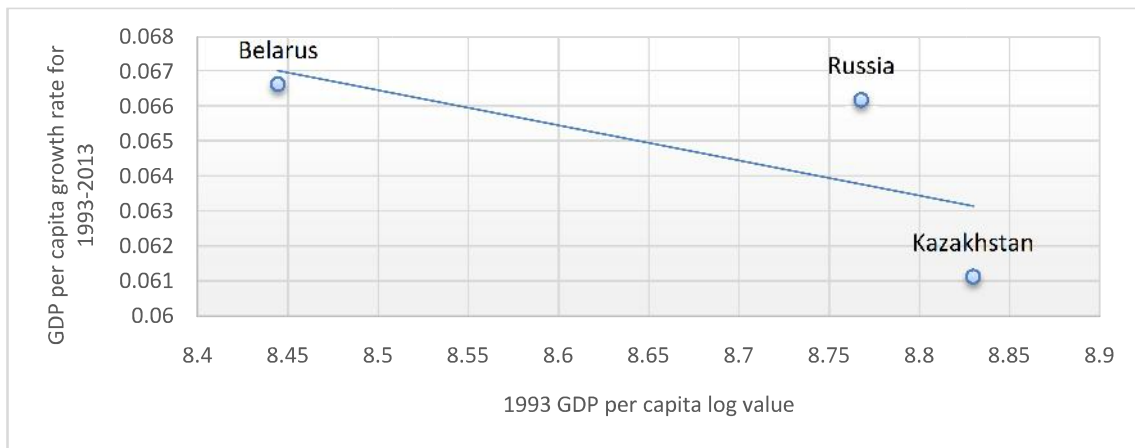
Table - 6. Regression Results of Beta Convergence for EurAsEC-3 Countries

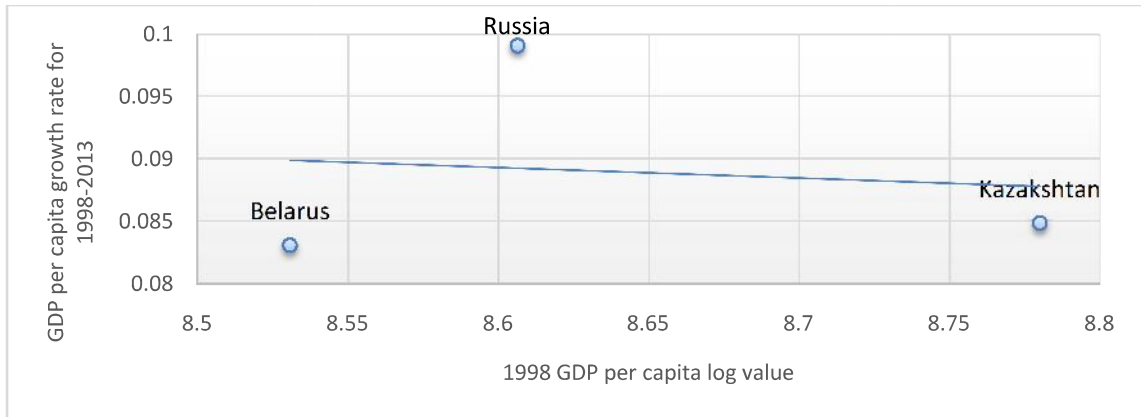
Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R^2	β conv.	β
1993-2013	0,1516	-0,0100	1,6174	-0,9280	0,356	0,524	0,4627	Yes	0,0112
1993-1997	0,4088	-0,0489	1,0656	-1,1065	0,480	0,468	0,5504	Yes	0,0544
1998-2013	0,1609	-0,0083	0,2751	-0,1230	0,829	0,922	0,0149	Yes	0,0089

Table - 7. Regression Results of Sigma Convergence for EurAsEC-3 Countries

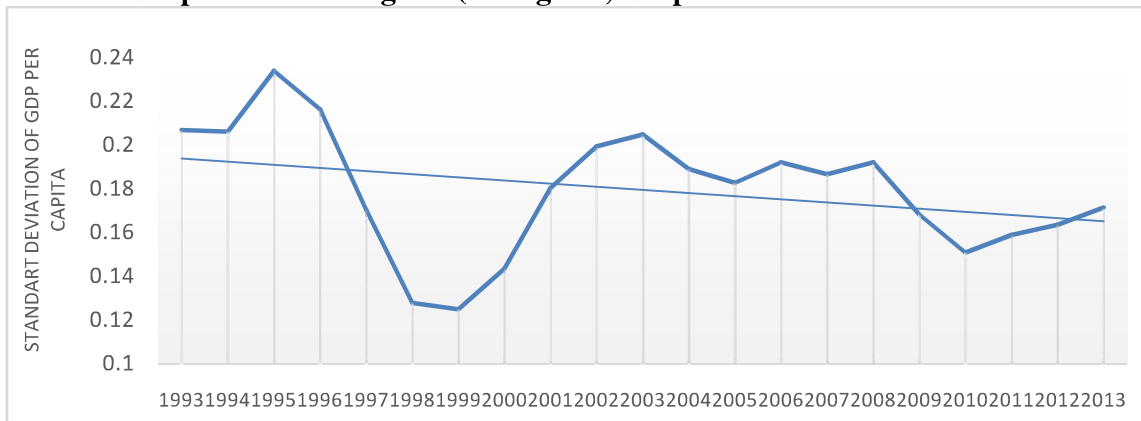
Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R^2	σ conv.
1993-2013	0,1938	-0,0014	16,69	-1,4406	0,000	0,166	0,0984	Yes
1993-1997	0,2193	-0,0063	11,685	-0,8174	0,001	0,474	0,1822	Yes
1998-2013	0,1567	0,0011	8,774	0,8557	0,000	0,407	0,0497	No

Graph - 5. β Convergence Graphs for EurAsEC-3 Countries





Graph - 6. σ Convergence (Divergence) Graph For Eurasec-3 Countries



c) SES-4 Countries

The first announcements concerning the agreement on the Single Economic Space, known as SES-4, were made in 2003 in Moscow. Draft agreements were finalized in Astana, Kazakhstan in August of the same year with the high-level participation of heads of state. The final agreement was signed in Yalta by Russia, Ukraine, Belarus and Kazakhstan in September 2003.

This agreement does not create a regime or an institution; it only draws up a framework for the single economic space project. The full implementation of this agreement depends on a possible change in the constitution of Ukraine and the harmonization efforts between the Kiev administration and the European Union (Suskho, 2010: 125-6). It is possible to associate the political results of these regional harmonization efforts with the recent crisis between Russia and Ukraine.

Moreover, the European Union establishes close relations with Belarus, Ukraine and Moldova in the east, and Armenia, Azerbaijan and Georgia in the southern Caucasia within the framework of the European Neighborhood Policy (ENP). These relations have security and political dimensions as well as economic dimensions. By establishing closer ties with the countries located in this outer circle, the European Union aims at embarking on serious political and economic integration via common agreements by means of harmonization with the basic values of the union. Important incentives are

offered in the scope of ENP in order to support the politics, economy and development of these countries (Averre, 2007: 177-178).

Within the framework of the European Neighborhood and Partnership Policy; Mediterranean countries such as Egypt, Tunisia, Algeria, and Morocco as well as CIT countries were allocated an assistance of 11 billion Euro for the period 2007-13. Financial aid directed towards countries including Russia, Belarus, Ukraine, Moldova, Georgia, Armenia and Azerbaijan have been allocated in the framework of the ENP instrument since 2007 (Bilici, 2010: 140-1).

Russia also tried to create a monetary union in the scope of SES-4, which it tried to establish with Belarus, Ukraine and Kazakhstan. However, the continued differences of economic development among its members caused this union to shy away from targets like a single currency. Russia is financially more advantageous and stable than these three countries and any other Eurasian country. Russia's position and its integration with international markets make these three countries dependent on Russia for many reasons, mostly geography and proximity, just like other Eurasian countries. In addition, the financial fragility experienced by these countries makes such a unification more difficult (Chaplygin et al., 2006: 48).

The regression results of the convergence hypothesis regarding SES-4 countries (Russia, Belarus, Kazakhstan and Ukraine) are shown in table 8 and graph 7 (β convergence); table 9 and graph 8 (σ convergence).

As for the SES-4 countries which include Ukraine in addition to EurAsEC-3 countries, divergence was observed in a positive sloping trend because Ukraine had a lower growth average in the period 1993-2013 according to the β convergence hypothesis compared to the previous group. As it can be seen in table 8, this trend was not disrupted in the sub-periods. The coefficient was not significant at the 10% significance level ($p=0,73$).

We can see the evolution of the income gap among SES-4 countries in graph 8. It was observed that the income gap increased over the years with a positive sloping trend line. This means there was an obvious divergence rather than σ convergence. The R squared value, the percentage at which the explanatory variables account for the dependent variable, was 94%, and our result was significant at the 0.01% significance level.

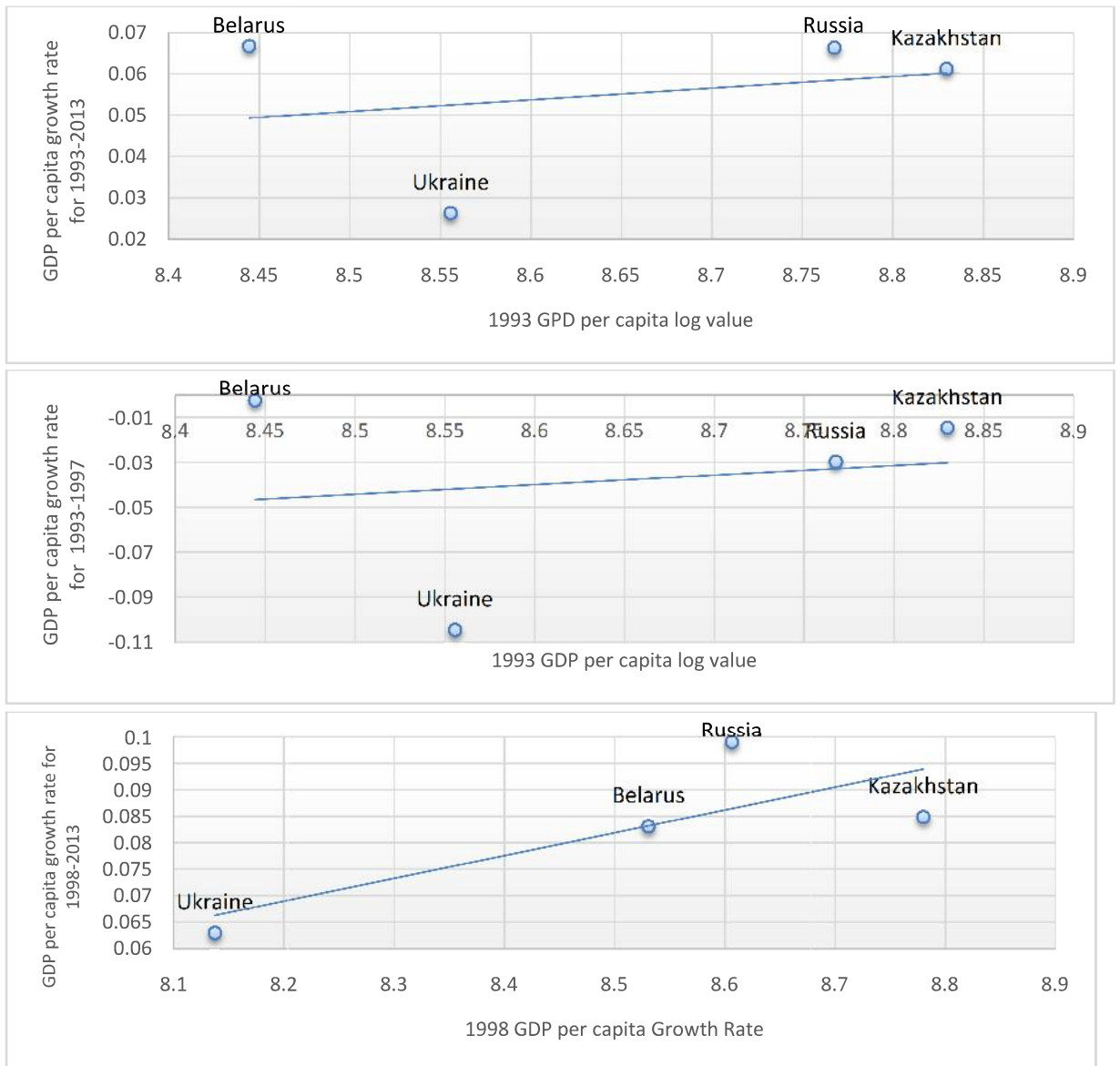
Table - 8. Regression Results of Beta convergence for SES-4 Countries

Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	β conv.	β
1993-2013	-0,1883	0,0281	-0,2971	0,3841	0,7944	0,738	0,0687	No	
1993-1997	-0,4081	0,0428	-0,2656	0,245	0,8154	0,832	0,0282	No	
1998-2013	-0,2835	0,043	-1,3988	1,8062	0,2967	0,213	0,62	No	

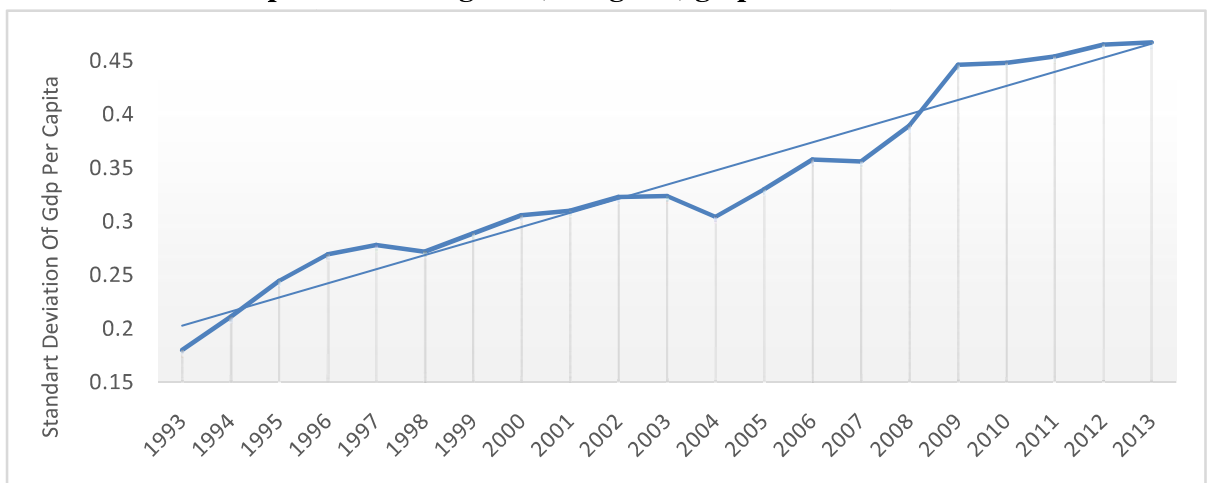
Table - 9. Regression Results of Sigma Convergence for SES-4 Countries

Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	σ conv.
1993-2013	0,2029	0,0132	22,881	17,366	0,000	0,000	0,9407	No
1993-1997	0,1858	0,0254	26,963	9,0277	0,000	0,003	0,9645	No
1998-2013	0,1907	0,0139	12,635	12,319	0,000	0,000	0,9155	No

Graph - 7. β convergence graphs for SES-4 Countries



Graph - 8. σ convergence (divergence) graph for SES-4 Countries



d) CA-4 Countries

The regression results of the convergence hypothesis associated with CA-4 countries (Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan) are given in table 10 and graph 9 (β convergence); table 11 and graph 10 (σ convergence). Turkmenistan was excluded since it does not want to participate in CIS or Central Asia Integration due to its regime (Libman, A.M. and Vinokurov, E. 2011: 473).

The results of regression analysis performed in the group composed of four Central Asia countries reveal divergence rather than convergence in the period 1993-2013 according to the β convergence hypothesis. However, the average growth rates of Kyrgyzstan and Tajikistan, which had low income levels, lagged far behind the growth rate of Kazakhstan, which had a relatively higher initial income level. This had a disruptive impact in terms of convergence. Our test was not found significant with the coefficients shown in table 10, with a p value much higher above the 10% significance level ($p=0.21$) and a R squared value of 0.61.

Graph 10 shows that the income gap among the CA-4 countries in terms of GDP per capita followed an upward trend in the period 1993-2013. The income gap among the countries in this group pursued an upward trend over the years; so it can be concluded that σ converge did not occur, either. According to the result that we found highly significant ($p=0$ at the %0.01 level), 86% of the total change in the dependent variable was explained by the independent variables used in the model, and the remaining 14% was explained by variables not included in the model.

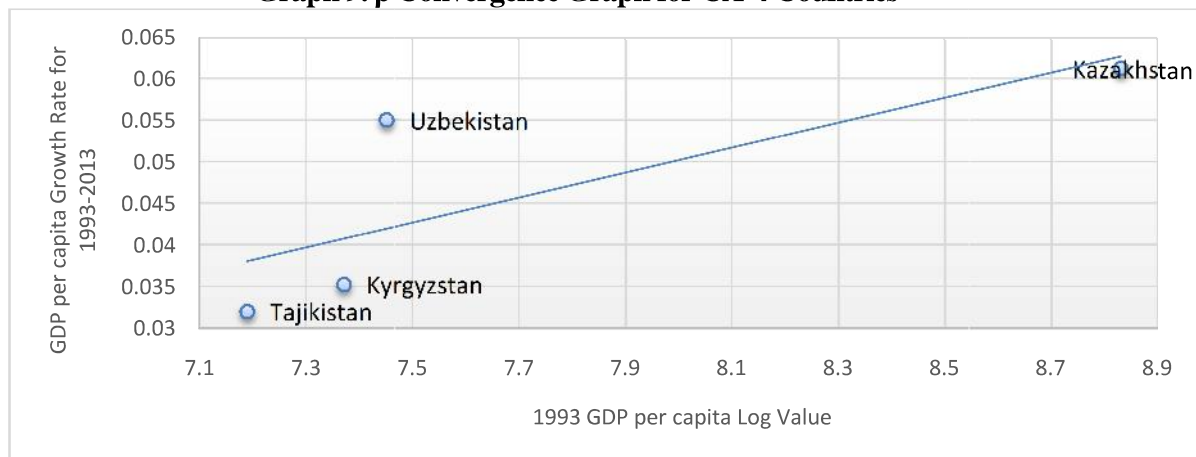
Table - 10. Regression Results of Beta Convergence for CA-4 Countries

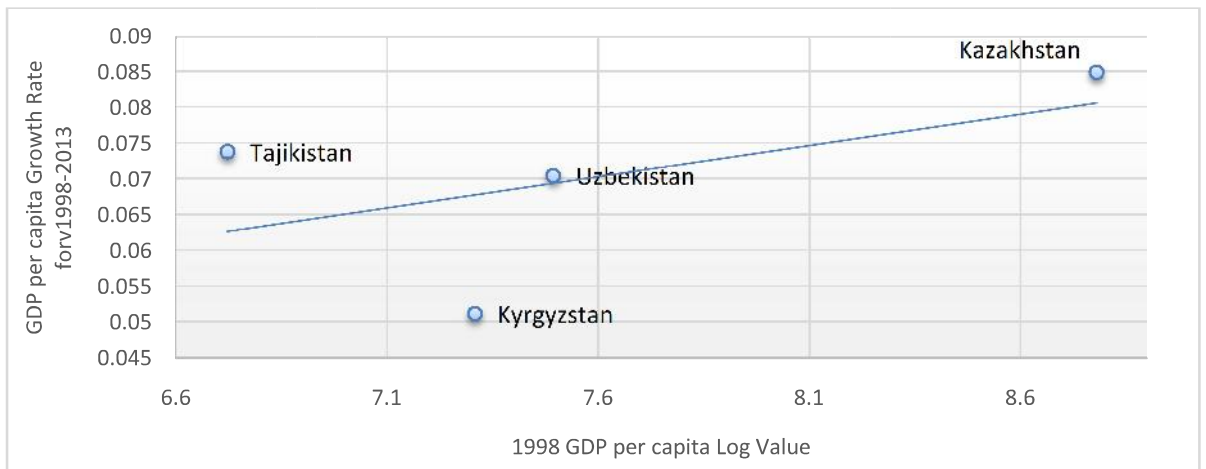
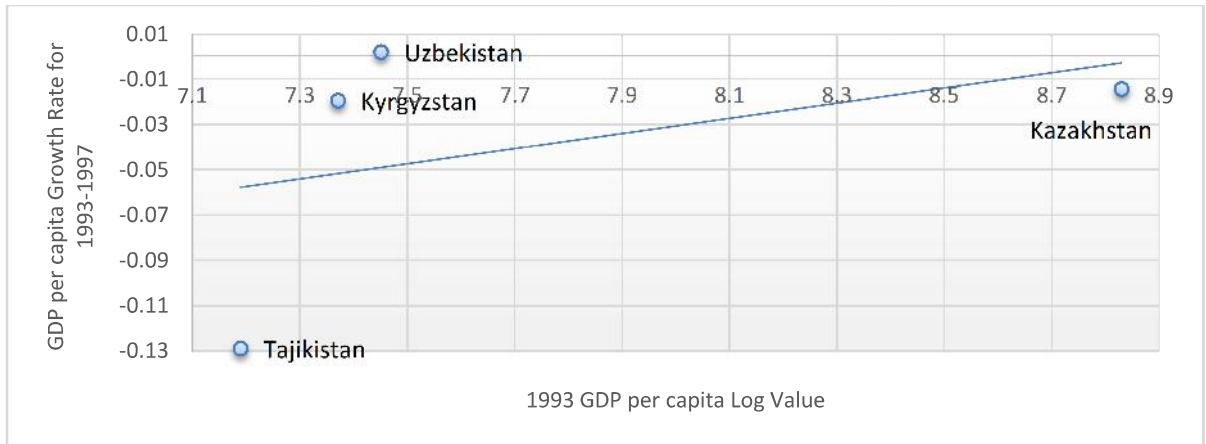
Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	β Conv.	β
1993-2013	-0,0696	0,015	-1,0762	1,7906	0,394	0,215	0,6158	No	
1993-1997	-0,2985	0,0335	-0,76	0,6593	0,527	0,578	0,1785	No	
1998-2013	0,004	0,0087	0,055	0,9052	0,961	0,461	0,2906	No	

Table - 11. Regression Results of Sigma Convergence for CA-4 Countries

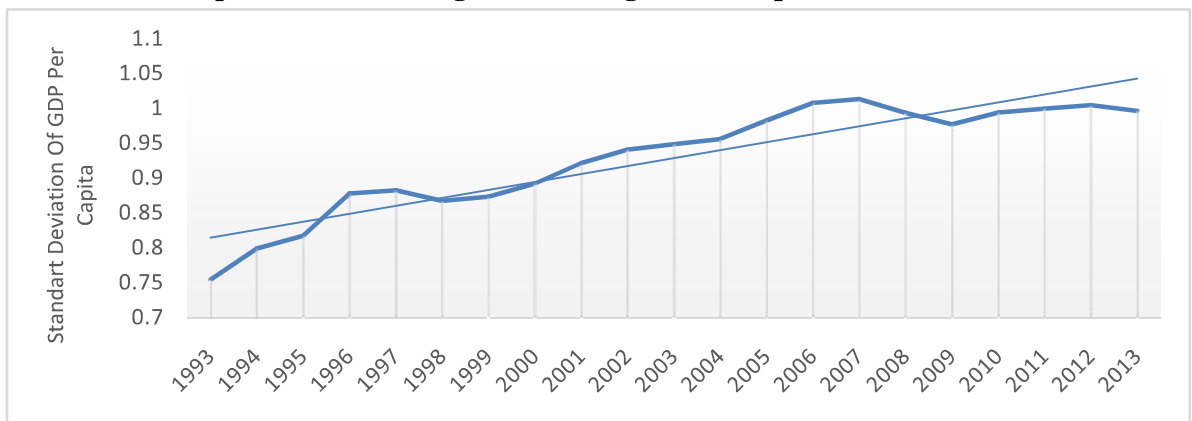
Period	α_0	α_1	$t(\alpha_0)$	$t(\alpha_1)$	$p(\alpha_0)$	$p(\alpha_1)$	R ²	σ Conv.
1993-2013	0,8145	0,0114	66,265	10,857	0,000	0,000	0,8612	No
1993-1997	0,7592	0,0335	69,265	7,4895	0,000	0,005	0,9492	No
1998-2013	0,8475	0,0091	49,085	6,9892	0,000	0,000	0,7772	No

Graph 9. β Convergence Graph for CA-4 Countries





Graph - 10. σ Convergence (Divergence) Graph for CA-4 Countries



6. Conclusion

A number of unification projects were attempted in the Eurasia region in the post-Soviet era. In our study, the situations necessary for the execution of these integration processes were analyzed, and the Eurasian Region integration process was examined in 5 groups (CIS, EurAsEC-5, EurAsEC-3, SES-4 and CA-4), and their economic converge status in the period from 1993 to 2013 was analyzed by using cross section method in the light of historical, geographical and economic factors.)

As a result of the analysis, economic divergence was detected in terms of the integration projects, rather than convergence. Even in EurAsEC-3, which displayed the best performance in terms of economic convergence according to the results of the analysis, the significance level of the results were not found sufficient although Beta and Sigma convergence values pointed to the existence of an economic convergence.

In other groups, the fact that Kyrgyzstan, Tajikistan and Uzbekistan, which had lower levels of income at the initial period, lagged behind Russia, Belarus and Kazakhstan, which had higher GDP per capita in terms of growth, is seen as the most important factor causing the rejection of the hypothesis because it revealed divergence. The lack of a heterogeneous structure among the countries that gained independence after the collapse of the Soviet Union, have a low GDP per capita and are in a systematical transformation process, the unexpected income obtained by countries particularly like Russia and Azerbaijan due to their rich natural resources (oil, natural gas), the hegemonic position of Russia in political and military terms, and the dysfunctional free market economy in most of the existing countries have a negative and distorting effect on the economic convergence hypothesis in the Eurasian region.

The results of our study are similar to the results obtained by Dufrénot et al. (2009), who stated that converge results in developing countries were influenced by the dynamics of a transitional economy. Accordingly, the government policies, industrial clusters, market organization and market relations underlying growth proceed through various stages. Organizational, historical, political and economic relations undergo serious changes in this transition process. This situation demonstrates a complex, dual market structure with its unique conditions. In this case, a general, IMF-type growth model recommended for all countries will not apply to these countries. In this respect, it is very important for these countries to develop a growth model depending on their level of adjustment with technology.

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Appendix 1

Table 1. Change of GDP per capita (PPP) in the Process Integration (1993-2013)

	1993		2013	
	USD	Group Average= 100	USD	Group Average= 100
Ukraine	5.195	151	6.486	106
Russia	6.423	187	11.856	195
Belarus	4.649	136	9.668	159
Kazakhstan	6.834	199	13.922	228
Kyrgyzstan	1.588	46	2.112	35
Tajikistan	1.325	39	1.532	25
Uzbekistan	1.721	50	2.711	44
Azerbaijan	3.368	98	7.177	118
Armenia	1.291	38	4.721	77
Moldavia	2.639	77	2.948	48
Turkmenistan	4.429	129	5.798	95
Georgia	1.693	49	4.214	69
Average	3.430	100	6.095	100

Source: World Bank <http://databank.worldbank.org>, November 2014.

Table 2. Change of the GDP per capita (PPP) in the Process Integration (% , 1993-2013)

	1993		2013		1993-2013 Absolute % change in income	1993-2013 % change in terms of average in income	
	DP Per Capita (USD)	Group Average = 100	GDP per capita (USD)	Group Average= 100			
CIS CA-4 SES-4 EurAsEC-5 EurAsEC-3	Ukraine	5.195	151	6.486	106	24,85	-29,80
	Russia	6.423	187	11.856	195	84,59	4,28
	Belarus	4.649	136	9.66	159	107,96	16,91
	Kazakhstan	6.834	19	13.922	228	103,72	14,57
	Kyrgyzstan	1.588	46	2.112	35	33,00	-23,91
	Tajikistan	1.325	39	1.532	25	15,62	-35,90
	Uzbekistan	1.721	50	2.711	44	57,52	-12,00
	Azerbaijan	3.368	98	7.177	118	113,09	20,41
	Armenia	1.291	38	4.721	77	265,69	102,63
	Moldavia	2.639	77	2.948	48	11,71	-37,66
	Turkmenista	4.429	129	5.798	95	30,91	-26,36
	Georgia	1.693	49	4.214	69	148,91	40,82
	Average	3.430	100	6.095	100	77,70	0,00

* * * * *

Apstrakt

U ovoj studiji će biti ispitan proces integracije evroazijskog regiona u teorijskom i empirijskom smislu. Potencijalni uticaj ekonomske integracije će se ocenjivati u kontekstu onoga što bi trebalo da se uradi u cilju uspešne integracije. U ovoj fazi upoređivaće se integracije u EU i integracije u evroaziji. Kasnije će se izvesti studije ekonometrijske analize čime će ekonomske integracije Centralne Azije biti analizirane odvojeno a izvršiće se pokušaj prikazivanja rezultata u kontekstu konvergencije hipoteze. Nakon toga predstaviće se neki predlozi rešenja integracije.

Ključne reči: međunarodne integracije, evroazijska unija, zemlje u razvoju