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# REGIONAL ECONOMIC GROWTH AND CONVERGENCE IN UZBEKISTAN

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## ABSTRACT

The article presents the state of and changes in the pattern of regional diparities in Uzbekistan over the years 2010-2018. The convergence in the level of economic development of regions are examined in a dynamic approach on the basis of regional GDP per capita.

**Design/methodology/approach** –The evolution of regional disparitiesin Uzbekistan is studied using convergence methods; σ-convergenceand β-convergence

**Findings**–The results obtained using the σ- convergence methods are found to indicate decrease in regional differences in the years in the years 2010-2016, a steady increase in 2016-2018 and according to the results of β-convergence analysis,the differences in the development of the regions of the Republic of Uzbekistan in GDP per capita in 2010-2018 are slightly eliminated.

**Practical implications** –In these studies, attention is paid to convergence in the socio-economic development of regions, and in the analysis of their change, economic aspects come to the fore.

**Originality/value** –An answer is sought to the question of whether the growth dynamics had a favourable effect on the evolution of regional convergencein Uzbekistan. It is hoped that the results of the study would be useful for regional planning in Uzbekistan.

***Keywords: regional diparities, regional GDP per capita, β-convergence,σ-convergence, regions of Uzbekistan***.

**Jel classification**: C0, C5,R15

## 1. INTRODUCTION

The fact that the subject of variations in regional development in recent years is considered a topical issue is of great interest to geographic and Economic Sciences, this situation can be seen in the rapid increase in the number of publications and literature on this topic.

The chief present-day problem of socio-economic development,in geographical-economic terms, is growing spatial inequality when viewedin a regional approach. In the recent years regional disparities have become of great interest to geographical and economic sciences, as manifestedby a fast-growing number of publications on thesubject. Worth special notice are empirical-methodological studies of regional differences in theWorld, e.g. Domański (2005), Henley (2005), Kosfeldet al. (2006), Rodriguez-Lopez et al. (2009),Czyż&Hauke(2011), Otsuka et.al(2016), PratapKumar(2019),the empirical-methodological research conducted by Agnieszka (2019)and others.

Realizing the seriousness and importance of the problem of regional socio-economic disparities, the study measures and compares the levels ofsocio-economic development of 14 regional administrative divisions of Uzbekistan (i.e., 12 regions (Andijan, Bukhara, Jizzakh, Kashkadarya, Navoiy, Namangan, Samarkand, Surkhandarya, Syrdarya, Tashkent, Fergana, Khorezm),one autonomous republic (Republic of Karakalpakstan) and one independent city-the capital of Uzbekistan(Tashkent city) based on the levels of their development. It is hoped that the results of the study would be useful for regional planning in Uzbekistan.

In these studies, attention is paid to convergence in the socio-economic development of regions, and in the analysis of their change, economic aspects come to the fore.

The evolution regional disparities in Uzbekistan is studied using convergence methods on the GDP dynamics in the years 2010-2018**.**

## 2. REGIONAL DATA AND METHODS OF ANALYSIS

The present investigation is exclusively based on secondary data sources. The data is extracted from the database of the State committee of Uzbekistan on statistics.

In general, each sector has its own significant share in the formation of GDP in Uzbekistan. We can observe this in the figures of 2018 year data, that is, agriculture, forestry and Fisheries accounted for 32.4 percent, industry(including construction) 32 percent, services 41.7 percent(Fig.1). Also, net product taxes are 11.2 percent.

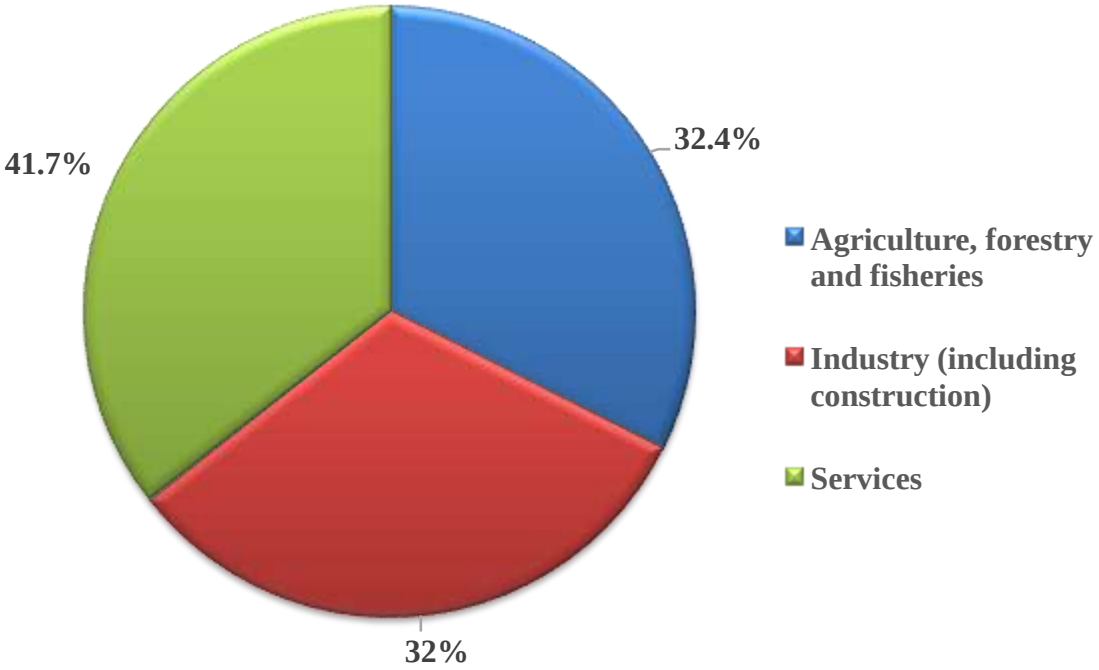


**Fig.1. Structure of gross domestic product of the Republic of Uzbekistan by types of economic activities, in 2018, as a percentage of the total[1]**

[1]The State committee of Uzbekistan on statistics, stat.uz

As a result of economic reforms in the country and various economic and social programs, the GDP growth rate is 6.7 percent on average in 2010-2018.

During these years, the highest GDP growth rate was 7.8 percent.In 2011, this was compared to 2010. The value added index was higher this year in construction (8.1 percent) and other services (9.2 percent).

For a more accurate representation of the analysis, we will focus on the per capita GDP size. Over the years 2010-2018, a period of Uzbekistan's dynamic economic development, all the regions recorded a marked increase in per capita GDP. Hence, there arises the question of whether economic development was accompanied by any significant changes in regional disparities. To determine the tendency of change in this respect, use is made of methods of convergence analysis.

Regional Gross DomisticProduct (GDP) per capita analysis confirms uneven development in Uzbekistan (Fig.2).

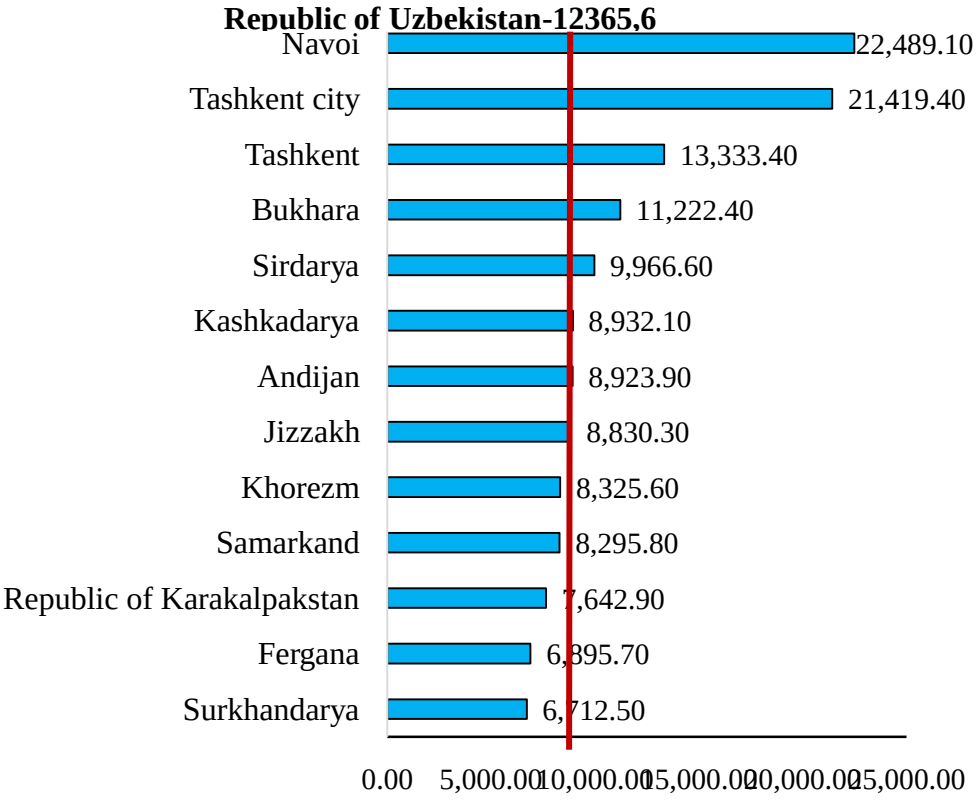


**Fig.2.Volume of regional Gross Domestic Product per capita, in 2018(in current prices, thousand soums)**[2]

The share of five regions, including Tashkent, Tashkent, Samarkand, Kashkadarya and Andijan makes up 54 percent in the total regional gross domestic product per capita in Uzbekistan in 2018. An analysis of the regional gross domestic product data per capita examines the tendency for its increase with different rates of growth in the regions. Its value makes up 22489.1 thousandsoums in Navoi, and it equals 6712.5 thousand soums in Surkhandarya. That is the 3.5 times lower than in Navoi in 2018. Regional disparities demonstrate the existence of different economic factor endowment in Uzbekistan's regions. The factors of production are unequally and unevenly distributed among regions. That explains the paradox,why

[2]The State committee of Uzbekistan on statistics, stat.uz

11 regions have a lower than the average value of regional GDP per capita. One could distinguish the group of the industrially developed and backward agrarian regions in the Uzbekistan.

The evolution of regional disparities in Uzbekistan is studied using convergence methods. In a broad sense, regional convergence means a tendencyof the level of regional GDP per capita to equalise over time. In a narrower sense, convergence is a relatively faster developmentof economically weak regions than that of strong ones, leading to a reductionof differences between them. An opposite phenomenon is termed divergence(Czyż and Hauke,2011).

In the present article use is made of the classic methods of convergence analysis: σ-convergence and β-convergence

σ-convergence is measured as the variance of regional per capita income given by the formula(Rahul Srivatsa&Stephen, 2010):

$$\sigma_t = \sqrt{(\frac{1}{N-1})\sum_{t=1}^{N}[\log(y_{it}) - \log(\overline{y}_t)]^2}$$

Where:

$y_{it}$- regional GDPper capita in region *i* in the year *t*;

$y_t$- GDP per capita in the year *t*;

N- number of regions.

There is σ-convergence in the regional system when the time sequence of the $\sigma_t^2$ values is decreasing.

In σ-convergence, the approach applied to an analysis of changes relies on models of comparative statics, i.e. a comparison is made of how the pattern of regional differences changes with time(Czyż and Hauke,2011).

β-convergence is interpreted as a process of narrowing of inter-regional differences in which regions lagging behind in development display a faster growth rate than advanced ones. β-convergence is determined on the basis ofthe formula(Andrew et.al.,2008):

$$\ln(y_{i,t}/y_{i,t-T}) = \alpha + \beta\ln(y_{i,t-T}) - u_{i,t})$$

where:

$y_{i,t}$–regional per capita GDP in region *i* in the year *t*;

$u_{i,t}$- random error;

T-number of years from the initial to the final one.

β-convergence occurs when, in a regression equation of the mean annual increase in regional GDPper capita from its initial level, the coefficient of regression β is statistically significant and negative(Czyż and Hauke,2011).

## 3. ANALYSIS OF DISPARITIES IN REGIONAL GDP IN UZBEKISTAN OVER THE YEARS 2010-2018

In the analysis of σ-convergence, regional differences in the successive years of the period 2010-2018 are measured by the variance of per capita GDP. The variance figures form decreasing sequence, with some

fluctuations, and display adownward tendency in regional disparities. The curve of variance describes the evolution of regional differences between 2010 and 2018 (Fig. 3).

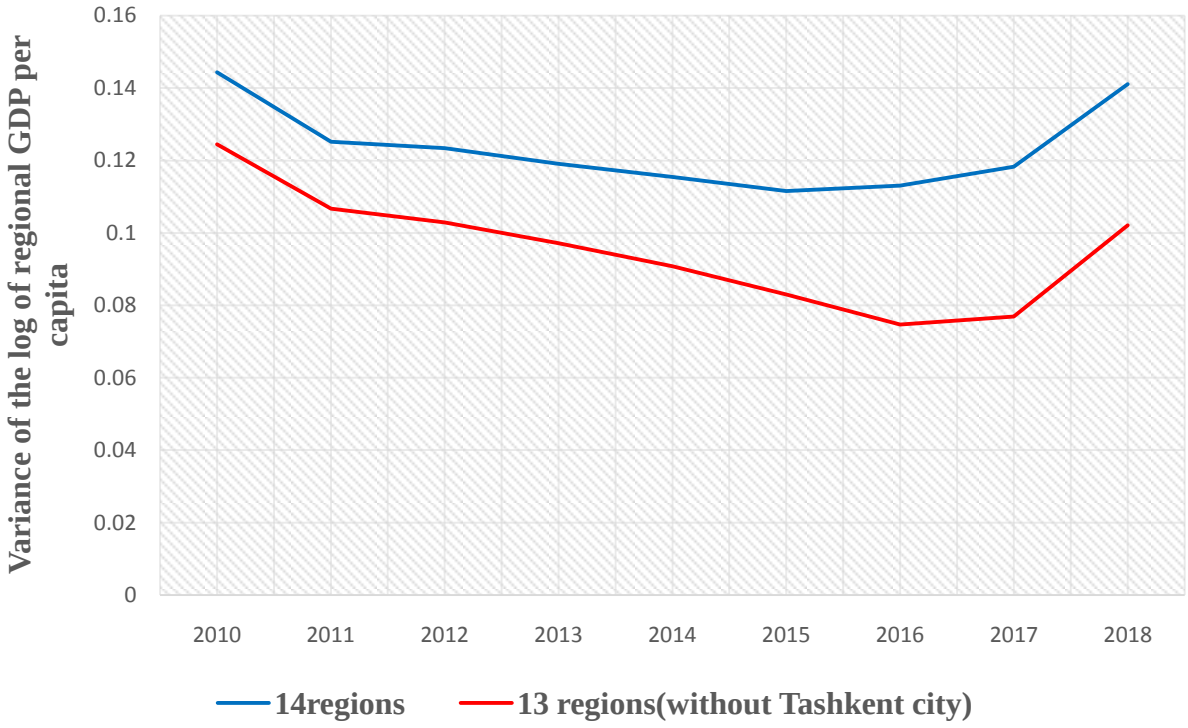


**Fig.3. σ-convergence (2010-2018 )[3]**

On the basis of its shape, one can discern fluctuations and their corresponding subperiods in the pattern of change in regional disparities: a steep decrease in disparities in the years 2010-2011, another slow decrease in 2011–2016, their slight increase in 2016–2017, and fast increase in 2017–2018. It is worth noting that the curve of variance of GDPper capita plotted for 13 regions without capital city-Tashkentalso shows evidence of an increase in regional disparities in recent years.

In the analysis of β-convergence, a study is made of the dependence between the dynamics of change in GDP per capita figures over the years 2010-2018 and this index at the start of the period, i.e. in 2010. This is intended to answer the question of whether regions lagging behind in development (occupying a low positionon the scale of the 2010 value of GDPper capita) display a tendency towards a faster increase in this GDPper capita than economically advanced ones (occupying a relatively high initial position on the income scale). The estimation of the model of β-convergence leads to an equation of the form:

$$y=8,71-5.56*x$$

$$R^2=0.52, \text{ significant at } \alpha = 0.43$$

where:

y – log of the mean annual increase in regional GDPper capita, and

x – log of regional GDP per capita,in 2010.

[3]Author's calculation

The goodness of fit of the model is poor. The regression coefficient β = -5.56 is high enough and negative, which shows a presence of β-convergence. The diagram of the regression equation is a downward curve, which even means the convergence, i.e. a stronger growth rate of GDP per capita in regions of low regional GDP per capita than in those with a relatively high initial regional GDP per capita (Fig.4).

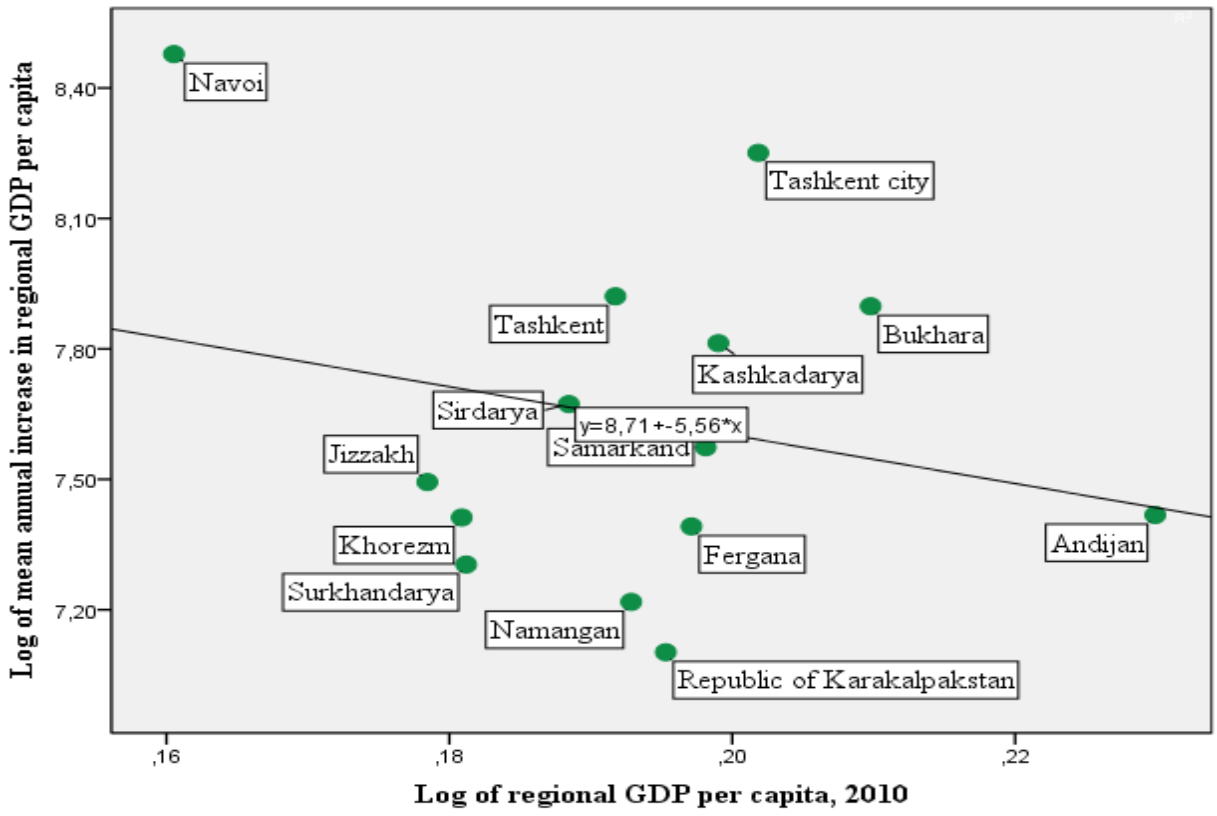


**Fig.4. β-convergence (2010-2018)[4]**

According to the results of β-convergence analysis, the differences in the development of the regions of the Republic of Uzbekistan in GDP per capita in 2010-2018 are slightly eliminated.

## CONCLUSION

As a precondition for formulating the goals and measures of the regional policy, it is necessary to conduct an analysis of social and economic characteristics of the regions.

The results obtained using the σ- convergence methods are found to indicate decrease in regional differences in the years in the years 2010-2016, a steady increase in 2016-2018 and according to the results of β-convergence analysis,the differences in the development of the regions of the Republic of Uzbekistan in GDP per capita in 2010-2018 are slightly eliminated.

While Beta-convergence focuses on detecting possible catching-up processes, Sigma-convergence simply refers to a reduction of disparities among regions in time. The two concepts are of course closely related. Formally, Beta-convergence is necessary but not sufficient for Sigma-convergence. Intuitively, this is either

[4]Author's calculation

because economies can converge towards one another but random shocks push them apart or because, in the case of conditional Beta-convergence, economies can converge towards different steady-states. This and a number of limitations of the Beta-convergence approach (see for instance Quah, 1993) have led some economists to suggest that the concept of Sigma-convergence is more revealing of the reality as it directly describes the distribution of income across economies without relying on the estimation of a particular model.The convergence loses credibility if one makes thefollowing qualifications: (i) the model is not able to explain why leaders change with thepassage of time or why some followers before can become leaders later (as is the caseof Uzbekistan); (ii) the model fails to explain why some poor regions stay poor and rich regions stay rich, without any tendency to converge; (iii) the model does not explain why some Regions fell from a fast-growing club into a slower onezbekistan); (iv) themodel does not explain further why convergence holds for some periods and not for others.

There were several causes leading to distortion of balance in all regions specifically, rate of development in initial years of market economy, attractiveness of the place to investors, economic-geographic location of the area, condition of infrastructure, features of innovation.

In the Strategy Uzbekistan's Five-Area Development Strategyfor 2017-2021(defined by the Decree of the President of the Republic of Uzbekistan "On Uzbekistan's Development Strategy")focuses on Integrated and balanced

socio-economic development of provinces, districts and cities, optimum and efficient use of their potential as one of the priorities**.** In addition, a decree "On priority measures to ensure the accelerated socio-economic development

of the regions" (signed by President of the Republic of Uzbekistan Sh. M. Mirziyoyev on August 8, 2017). The document was adopted to analyzes the socio-economic development of the regions, radically improve the formsand methods of organizing work and the quality and living standardsof the population, and other important tasks. A major objective of the development programmes lunched in Uzbekistan is to bring the balanced regional development.In order to achieve the goal, the economic planning in the country hastraditionally been focused upon the need to provide special support to the disadvantaged areas. Although the country remains on course to achieve its socio-economic development goals, related challenges such as inequality and regional disparities persist(Hurriyat, 2019).

Special concessions have been approved for the development of specific regions of Uzbekistan. The following Free Economic Zones1 have been created during 2008-2018 years: Navoi Free Economic Zone; Angren Free Economic Zone; Dzhizak Free Economic Zone; Urgut Free Economic Zone; G'ijduvon Free Economic Zone; Kokand Free Economic Zone; Hazorasp Free Economic Zone, "Nukus-farm", "Zomin-farm", "Kosonsoj-farm", "Sirdaryo-farm", "Bojsun-farm", "Bustonlik-farm" and "Parkent-farm".Subject to the value of foreign investment, companies are eligible for concessions of varying duration on: land tax; property tax; corporate profits tax;tax on improvements and the development of social infrastructure and others.

As an additional stimulus, special rules for making payments in foreign currency have been introduced for companies registeredin the above zones.Companies are entitled not to apply items of tax law thatworsen their tax position.In addition to the general concessions applicable in all zones, special concessions apply in specific zones (Tax incentives for foreign investments in Uzbekistan, *Deloitte*).

Starting from independence diminishing regional differences and harmonizing the economics has become main focus of the policy. In addition,there were several improvements in purpose of increasing competitiveness among regions and role of regions had fundamental changes which also can be seen in several aspects of life.

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