THE GREATER TUMEN INITIATIVE AND REGIONAL COOPERATION IN NORTHEAST ASIA

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Abstract- Since the early 1990s, the Greater Tumen Initiative (GTI) has emerged as one of the major platforms for cross-border regional integration in Northeast Asia. Founded officially in 1995 with the support of UNDP, it was given a major boost in 2005 as China, South Korea, Russia, and Mongolia took ownership of the initiative. This paper assesses the effectiveness of GTI in terms of convergence in relative per-capita GDP across the 12 member regions over the period 1995-2013. The results indicate that in the first decade of the sample period intradistributional convergence was strong, while after 2005 improvements in living standards relative to a common benchmark dominated the process. Overall, the findings suggest that GTI has promoted regional convergence, especially over the past decade.

Index Terms- regional integration; convergence; Northeast Asia; Greater Tumen Initiative.

I. INTRODUCTION

A proposal made first at a conference in 1990 called for the creation of a cross-border economic hub along the Tumen River where China, Russia, and North Korea share a border drawing the attention of the United Nations Development Program (UNDP), which had sponsored the event. A year later, UNDP launched the Tumen River Area Development Program (TRADP) as a regional cooperation project between Russia, China, Mongolia, North and South Korea with Japan as observer. In 1995, the five member states signed an agreement establishing a consultative mechanism. Despite regular annual meetings, investment forums, and training workshops, progress was slow due to unrealistic goals, lack of funding, and the Asian Financial Crisis. Over the following decade, most initial objectives were not met and ultimately relatively few projects were implemented.

In 2005, the program received a new breath of life as it was transformed into the Greater Tumen Initiative (GTI). Member countries agreed to assume ownership of the initiative and to provide financial support. The geographical area covered by GTI was expanded to include the three provinces of Eastern Mongolia, the three provinces of Northeast China, Russia's Primorsky region, and South Korea's four provinces on its eastern coast. Moreover, a new strategic action plan was adopted for the period 2006-2015 focusing on five priority sectors, including energy, environment, investment, tourism, and transport.

[1] An overview of the historical and institutional development of TRADP is provided in [3], [4], [6], [7], and [8].

[1] North Korea withdrew from GTI in 2009 and is no longer a member. The country is excluded from the analysis due to the lack of economic data.

[1] An overview of the historical and institutional developments of GTI since 2005 can be found in [1], [2], [5], and [9].

The goal of this paper is to evaluate the economic impact of TRADP/GTI since 1995 and to assess its effectiveness in fostering regional integration. In particular, the paper uses non-parametric methods to study the convergence in living standards between the regions involved in the initiative. The existing literature on TRADP/GTI in English exhibits several shortcomings. The majority of studies were conducted in the 1990s and early 2000s and their findings are outdated. Given that the time frame of GTI's strategic action plan is coming to an end this year, it is an opportune time to take stock of the initiative's impact. Furthermore, previous works focused to a great extent on historical, political, and institutional aspects. However, economic objectives are at the heart of this regional cooperation mechanism and deserve to be examined in greater detail. Last but not least, existing research has been almost exclusively descriptive with regards to economic data.

II. METHODOLOGY AND DATA

The paper estimates the probability density function of relative per-capita GDP using a kernel function. Let $X_1,\ldots,X_n$ be a sample of n independent and identically distributed observations on a random variable X. The density value f(x) at a given point x is estimated by the following kernel density estimator:

$$\hat{f}(x) = \frac{1}{nh}\sum_{i=1}^{n} K\left(\frac{x-X_i}{h}\right) \qquad (1)$$

where h denotes the bandwidth of the interval around x and K is the kernel function.The kernel estimator assigns a weight to each observation in the interval around x, with the weight being inversely proportional to the distance between the observation and x. The density estimate consists of the vertical sum of frequencies at each observation. The resulting smooth

curve helps visualize the shape of the distribution of relative per-capita GDP and detect the presence of "convergence clubs" represented by modes.

The sample covers the 12 member regions of GTI over the period 1995-2013. These include China's four northeastern provinces (Heilongjiang, Jilin, Liaoning, and Inner Mongolia), Russia's Primorsky Krai, South Korea's two metropolitan areas (Ulsan and Busan) and two provinces (Gangwon and Gyeongsangbuk) , and Mongolia's three eastern provinces (Sukhbaatar, Dornod, and Khentii). Regional per-capita GDP is measured according to purchasing power parity (PPP) in constant 2010 international dollars and is expressed as a percentage of the wealthiest region's level, which is Ulsan.

III. RESULTS

Fig. 1 shows the regional per-capita GDP averaged by country relative to the GTI benchmark. The levels of the three Korean provinces do not display a clear trend and have comparatively minor variations over the sample period. Divergence seems to have occurred in the aftermath of the 1997 Asian Financial Crisis and the 2008 global financial crisis but even then the magnitude did not exceed 5%. In contrast, Chinese provinces exhibited consistent convergence tendencies as their relative per-capita GDP levels quadrupled. Primorsky region converged towards the benchmark in a similar fashion but only since 2003. For Mongolian provinces, the process of catching up began in 2006 but it leveled off after the start of the global financial crisis and picked up again in 2010. Accordingly, the convergence tendencies in Mongolia were much weaker than in other countries and their relative per-capita GDP barely managed to double in two decades.

Fig. 2 presents the kernel density distributions of relative per-capita GDP in 1995, 2005, and 2013. The first graph illustrating the shifts in the distribution relative to the GTI benchmark exhibits two patterns. There is a shift of the distribution to the right which indicates convergence towards the benchmark. In addition, the shape of the distribution changes as the height of the main mode increases over time. This signifies intradistributional convergence as most of the probability mass concentrates more tightly around the value of around 25% of the benchmark level. Another interesting observation is the fact that between 1995 and 2005 most of the change occurs in the height of the mode rather than its width. By comparison, the period between 2005 and 2013 is marked by strong convergence towards the benchmark as well as a significant decrease in intradistributional dispersion of relative per-capita GDP.

[1] A data-driven bandwidth selection and a Gaussian kernel are used.

[1] Ulsan serves as the benchmark and is therefore excluded from the analysis. As a result, the final sample consists of 11 regions.

. CONCLUSIONS

The results of this study show convergence among GTI regions as well as between them and a common benchmark. This means that between 1995 and 2013 most GTI regions managed to catch up with the wealthiest region in the sample in terms of per-capita GDP. However, this has not been a linear process. The years immediately following the creating of TRADP in 1995 were marked by strong intradistributional convergence that gradually slowed down after 1998 and by a lack of convergence towards the benchmark. After the emergence of GTI in 2005, intradistributional convergence continued but was now coupled with persistent shifts of the distribution towards higher levels of per-capita GDP.

In conclusion, the results of the empirical investigation indicate that both TRADP and GTI had a positive effect on different aspects of regional convergence in NEA. There is still potential for improvement given the large differences in per-capita income levels across regions, especially between Korea and the rest. The recent intensification of Sino-Russian economic cooperation and the 2015 free trade agreement between China and Korea raise hopes that the process of regional integration in NEA is going to continue in the near future. Whether GTI continues to be a major part of this process or is overshadowed by bilateral or larger multilateral projects will depend on the enthusiasm and initiative of national and regional governments across member states.

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Fig. 1: Real per-capita GDP (PPP) of GTI member regions (% of Ulsan's level), 1995-2013

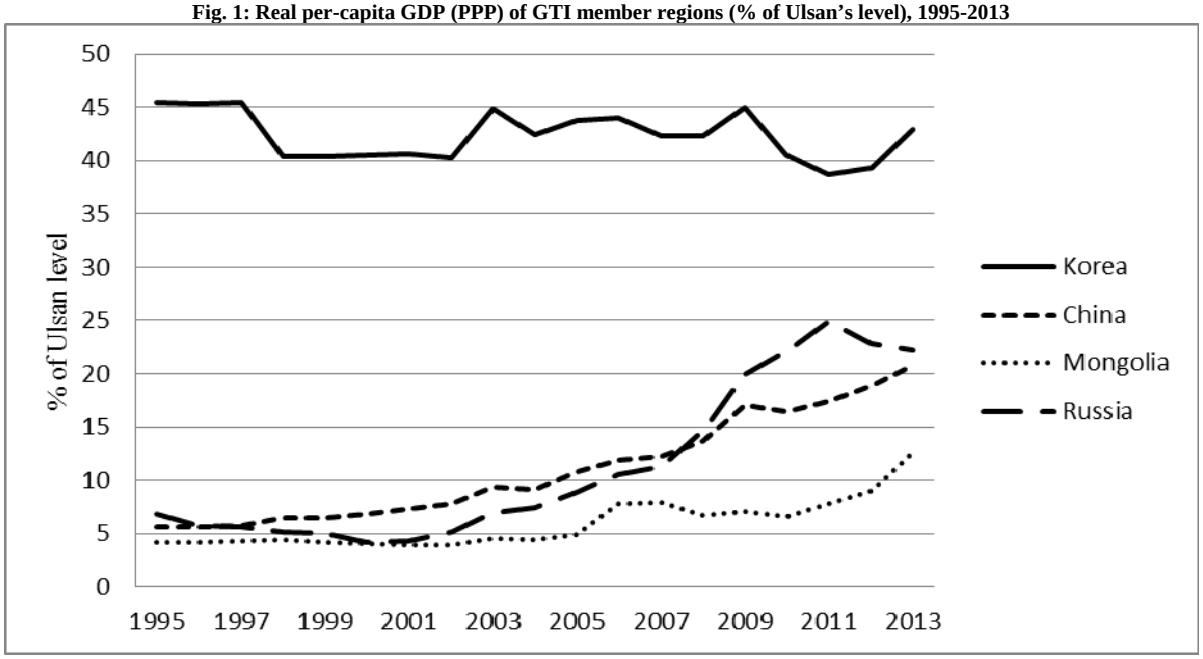
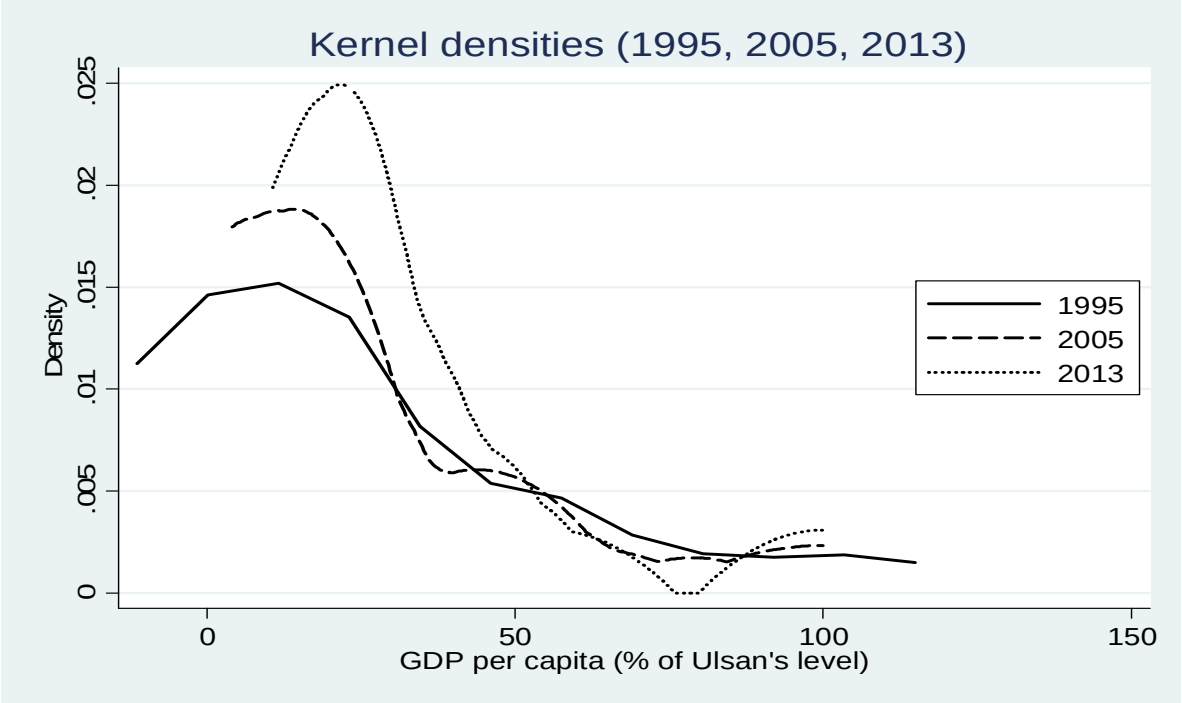


Fig. 2: Kernel density distributions of per-capita GDP (% of GTI benchmark)



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