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Comparative analysis of economic productivity in Georgian regions 2010-2020

Zura Gamtenadze[1,•] & Kristina Khupenia[2,α]
[1] *Ph.D. student of Business Administration, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia*
[2] *Ph.D. student of Business Administration, Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia*

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Abstract

Georgia has a challenging history of decentralisation. However, the main reforms have been enacted in 2014 and municipalities of Georgia has been given several major competencies and partial fiscal decentralisation has been achieved. Some other political transformations have been achieved, which indirectly have been impacting local economic development. The following analysis shows the economic productivity of Georgian regions, including Tbilisi. As the decentralisation process in Georgia is precisely related to municipalities, but statistical information is not sufficient to analyse, author and co-author empirically decided to analyse aggregated data and focus on regions, which consist of municipalities. Therefore, the sum of municipalities' economic productivity is reflected in regional terms. Economic productivity consists of multiple variables, however, according to the National Statistics Office of Georgia, all available data will be used for the comprehensive analysis of the proposed topic. Research methodology includes literature review, where researches of relevant studies of relevant countries will be examined, i.e. Baltic states and Poland. The following research is part of the Ph.D. research cycle, where the aim is to find the optimal model for developing financially self-sufficient municipalities and regions in Georgia. Main part of the analysis in the following is to find the strongest correlation between variables, which increase productivity, therefore can stimulate investment attractiveness and have a solid impact on economic development.

1. Introduction

In 2014, the Georgian parliament passed a code allowing Georgian local governments to take responsibility for major economic activities. Each municipality has its own major industrial sector, and municipalities generate more income. Measuring the economic performance of cities, municipalities or regions is important information for further strategic management on the part of decision makers. The strategic management process of these management units includes several key elements. One of the factors is analysing the most and least productive sectors and promoting further productivity gains through strategic development. The geographical concentration of economic activity leads to increased productivity, as it requires changes in infrastructure, society, cities, etc. These changes are controlled by city, rural, or regional decision makers (De la Fuente, 2010). In general, economic productivity is affected by several factors. In the paper below, only some of these factors are included in the analysis. Although it is important to analyse the economic performance of local governments for more efficient strategic management, the Georgia Office of National Statistics only provides regional data related to economic performance. Therefore, in this paper, we can assume that the local performance, the factors and variables that drive productivity, and the local outcomes are the sum of the municipal data.

Calculating a country's economic productivity is important for businesses and analysts to determine the efficiency of a country's economic system. Productivity data can provide information about how much a region's

• **E-mail:** gamtenadze.zura@gmail.com & **ORCID:** https://orcid.org/0000-0002-9001-1277
α **E-mail:** kristina.khupenia.272@eab.tsu.edu.ge & **ORCID:** https://orcid.org/0000-0001-6789-0376
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economic production can be expanded and how much additional production could be gained through efficiency gains (Böckerman & Maliranta, 2007). Gross Domestic Product (GDP) is a measure of a country's economic output and includes sales, income, and production of goods and services. An increase in GDP can lead directly to an improvement in the country's overall standard of living. However, high GDP alone is not enough to sustain a country's development. It is also necessary to increase economic productivity. It can be difficult to pinpoint exactly which factors influence regional economic productivity, but there are some obvious factors. for example: Differences in economic output between regions lead to different levels of economic productivity. Therefore, to improve the local economy, we need to improve the gross domestic product growth rate. In addition, infrastructure improvements can increase economic productivity by attracting new businesses and creating new employment opportunities. By improving these factors, regions with low GDP per capita can catch up with developed regions and achieve greater economic growth. Given the importance of boosting regional economic productivity, it makes sense that governments need to develop strategies to boost it. They do this, among other things, by investing money in improving the local infrastructure. Highways - accessible roads - are one of the missing elements in many developing countries, but they can be used to boost local growth and boost development (De la Fuente, 2010). In fact, many developing countries have no highways at all, making inland areas inaccessible except for major coastal areas. Improving highway accessibility will increase opportunities for growth outside coastal areas. It also allows for faster movement of goods and services between regions, increasing trade and spurring development efforts. Economic productivity is an important factor in evaluating a region's economy and determining how to improve it (Aarstad, Kvitastein, & Jakobsen, 2016). Increased productivity boosts local sales, income, production, and overall living standards. But productivity gains are difficult without the right infrastructure to enable businesses to grow and create new job opportunities. Therefore, businesses should strive to improve road access to improve economic productivity throughout Georgia.

This paper uses this new, reliable data to estimate production per worker in each region of Georgia. The paper analysis period from 2010 to 2020 shows the positive effects of decentralization reforms after 2014. However, central government policies also affect local productivity through tax cuts and the implementation of national projects. These factors were not considered in the analysis.

2. Methodology

Aggregate productivity level P in year t is defined as follows*:*

$$P_t = \frac{Y_t}{X_t} = \frac{\sum_i Y_{it}}{\sum_i X_{it}}$$

where Y is output, X is input and i denotes the whole economy. In order to measure economic productivity, input X is measured here by employment number or average salary and Y is value added. In the case of total factor productivity (TFP) input, X is an index of different types of inputs. We use the simple Cobb-Douglas formula:

$$X = \prod_j X_j^{\alpha_j}$$

where j denotes input type and a is a parameter. We require that $\sum_j \alpha_j = 1$ This means that constant returns to scale are imposed in the computation of TFP. Indeed, there is econometric evidence for the perspective that the assumption of constant returns to scale is not unreasonable at the macro level. An advantage of the labor productivity measure is that it is closely related to the most commonly used measure of living standards, which is gross national product divided by the number of inhabitants. In addition, measurement of labor productivity does not require information about other factors of production. However, TFP provides a more comprehensive measure of economic performance than labor productivity, because TFP takes into account the efficiency of capital input usage that is evidently an important element of competitiveness.

In this study we focus on the sources of productivity growth. We calculate the annual aggregate productivity growth rate in year t by using the following formula:

$$\frac{\Delta P_t}{P_t} = \frac{P_t - P_{t-1}}{(P_t + P_{t-1})/2}$$

The log-difference of aggregate productivity provides a very close approximation to the log-difference of aggregate output growth that is commonly used in the analysis of aggregate output growth. We focus on the

specific factors that contribute to productivity growth among continuing sectors. We use pairs of balanced panels in our research. There are several factors that go into an analysis. The input part of the analysis is divided into two parts: the employment ratio and the average salary of employed people. The employment rate will determine the percentage of people who create the wealth of the entire economy and how it increases each year. Salary is a factor in determining how much currency is needed to create a certain amount of wealth. The annual increase analysis will also be applied. For the Output part, we will only use total real GDP data because it provides a more precise measure of wealth creation in this particular case.

3. Literature Review

Georgian and foreign literature was reviewed, studied and worked on in preparation for the work. Over the past decade, the Georgian economy has experienced significant growth, primarily due to inflows of foreign direct investment, rising external debt, and large remittances from immigrants (Gamtenadze, 2021). All those have impact on regional productivity. In their theoretical review, Duranton and Puga (2003) emphasize importance of the labour market, but classify differently into three fundamental theoretical mechanisms: sharing, matching and learning (Gilles & Puga, 2003). As Rosenthal and Strange make clear, there is little direct econometric evidence on the importance of the different sources, and of labour market issues in particular (Rosenthal & Strange, 2004). Attention has also been paid to the diversity of channels through which ICT can contribute to enhance productivity and promote economic growth (Cardona, Kretschmer, & Strobel, 2013).

Our approach is based on achieving short-term and long-term goals. This means implementing strategies that simultaneously address the challenges facing the country today while paying close attention to maintaining a stable and sustainable economic environment for future generations. Dynamic competition instantly stimulates innovation and implementation of new technologies. However, it will take time for the results of these measures to appear in productivity. (Falcıoğlu, 2011) In particular, this kind of competition involves resource selection and redistribution, which also takes time. Therefore, the consequences of increased dynamic competition are expected to be more gradual and long-lasting than increased competition in the static sense. These points mean that industry-wide productivity growth is often associated with significant external adjustments realized through productivity restructuring between factories. The acceleration and sustained period of economic growth in Georgia since 2004 can be attributed to the following four factors (Bartelsman & Doms, 2000). A change of government, financial liberalization, opening the country to foreign trade, economic reforms were implemented, most of which were maintained after 2012, and new ones were added (e.g. income tax reform and the transition to the so-called Estonian model, pension reform, etc.).

On the one hand, the country's international competitiveness and strategies for attracting foreign direct investment require maintaining existing achievements (competitive tax levels, attractive business environment, etc.). However, it is unlikely that the acceleration of economic growth through liberalization, privatization, and deregulation will be repeated, and the constraints associated with structural changes, technological spill overs, and the development of high value-added sectors cannot be overcome by these approaches alone. Kangasharju and Pekkala report that there was an increase in regional disparities in labour productivity across the Finnish regions during the 1990s (Kangasharju & Pekkala, 2001). In addition, they discover that the manufacturing industries have been the most important segment of the Finnish economy in the increase of regional disparities. In particular, this pattern provides the motivation to focus on manufacturing in decompositions of productivity growth.

It is also important that the country's geo-economic location provides a safe and stable business environment, which lead to improvement of working conditions. primary source of economic growth emphasized by the literature is human capital (Stokey, 1991). It is argued that the level of education drives growth because it increases the ability to adapt and implement existing technology or to create new technologies. Subsequent theoretical analyses have emphasized the strategic complementarities between human capital and R&D activities. Redding for instance, builds a model in which investment in human capital made by workers and R&D efforts made by firms are complementary and interdependent, so that they jointly determine the growth equilibrium (Redding, 1996). Economists and policy-makers have pointed to public sector infrastructure as a fundamental element in the strategy of regional development policies. According to Boarnet, public capital provided in a particular region raises the comparative advantage of that region over the others, and could therefore attract factors of production from other locations where output or productivity might decrease (Boarnet, 1998).

4. Data and Results

Data from the National Statistics Office of Georgia from 2010 to 2020 shows that the most productive region according to employment is Tbilisi (Figure 1). The second most productive region of Georgia is Racha-Lechkhumi and Kvemo Svaneti. Even though this region had and has less employment rate, than other regions, central governments investments in tourism industry and related sectors increased output of the region and generates more wealth per employed. However, as the region was mainly oriented on tourism, since the COVID19 pandemic outbreak, productivity decreased in 2020. Producing, agricultural and trade regions, such as Imereti, Kvemo-Kartli and Samegreli-Zemo Svaneti regions' productivity increased between 2019 and 2020 (Figure 1).

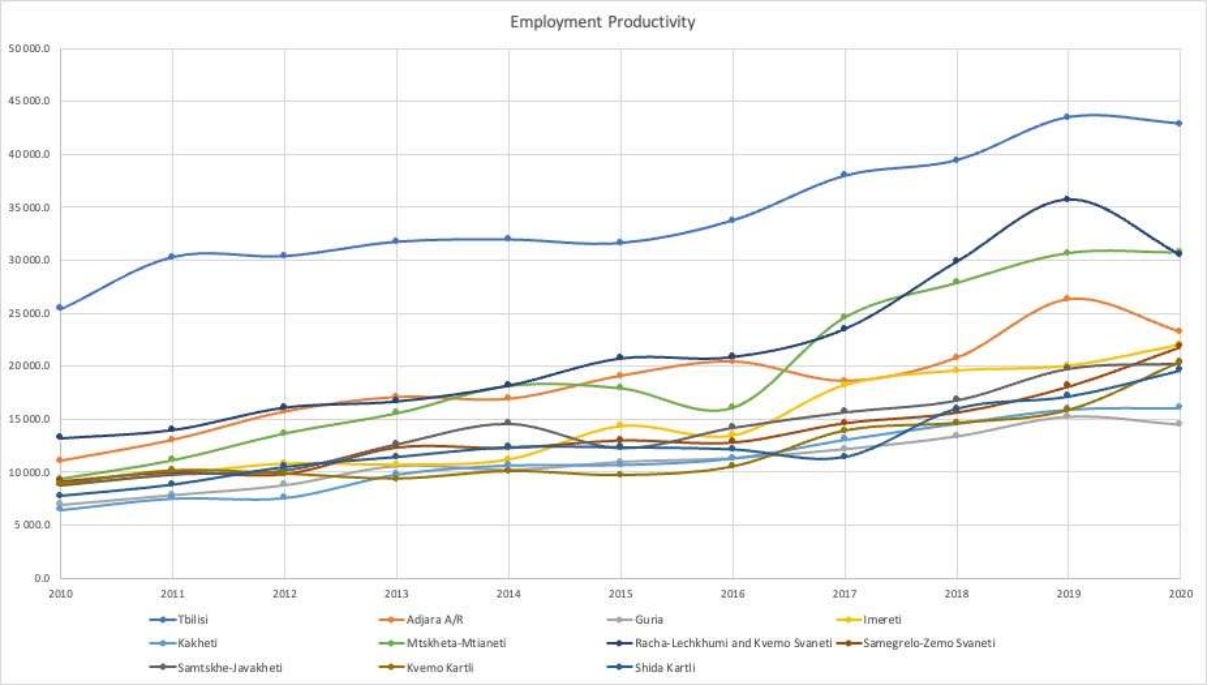

Figure 1. Productivity by Employment

Figure 2 shows changes in productivity. The most significant positive change occurred in Mtskheta-Mtianeti region between 2016 and 2017. In-depth analysis shows that the main reason is boost of economic activities due to the providing basic communal services and internet. Additionally, popularization of touristic sightseeing of the region increased number of tourists, therefore, their spending per employed in the tourism industry. The second most significant change happened in Shida Kartli region between 2017 and 2018, where territorial municipal reforms enacted, which gave possibility to manage more resources by municipal decision-makers. Moreover, the same factor, popularization of touristic sightseeing stimulated tourism industry. Besides pandemic, the huge negative change in productivity growth occurred in Samtskhe-Javakheti between 2014 and 2015. In-depth analysis shows, that migration in this region was highest in these specific years.

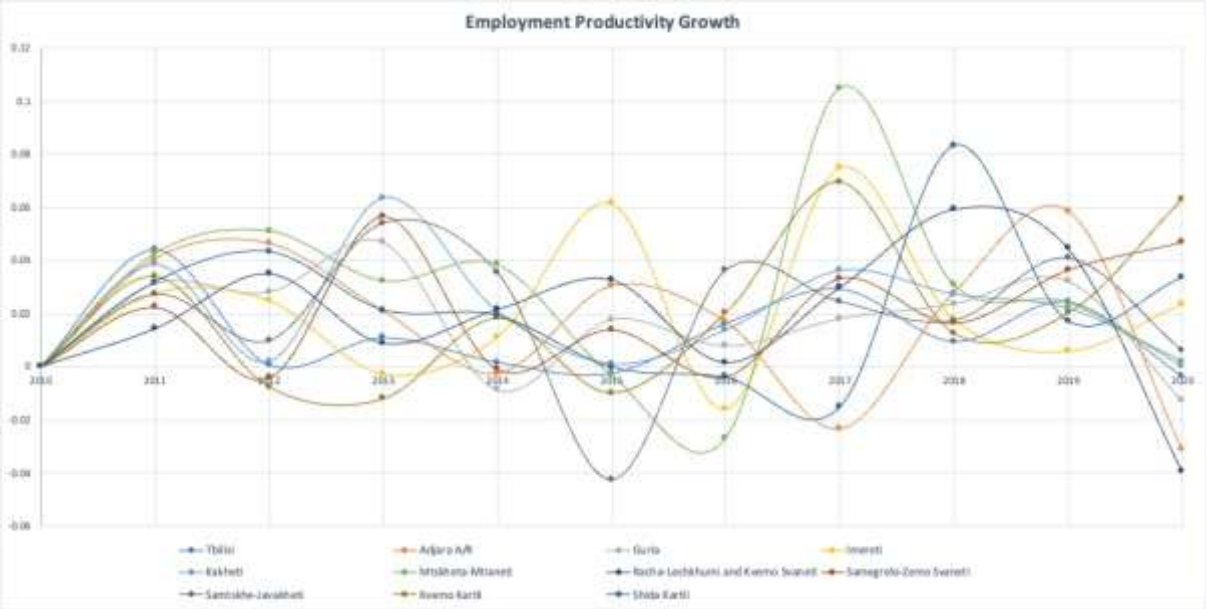

Figure 2. Productivity by Employment Growth Rate

Figure 3 shows productivity by Average Salary in regions. Average salary is not quite representative method to show labour market performance, however, the National Statistics Office of Georgia has been calculating average salary till 2022. In 2022 the Office added calculations of median salary. According to the Figure 3, the most wealth generated by one unit of Georgian currency (GEL) is in Tbilisi region. This can be explained by multiple factors and one of the most important one is competitiveness among employees for highly qualified applicants and the second, access to jobs. Both factors increase productivity. Additionally, almost all industries of Georgia is represented in Tbilisi. The second most productive region is Imereti, which has maintained the rank during the research timeframe. The factors impacting these results are industries in the region – production, tourism and retail. The least productive by average salary in Racha-Lechkhumi and Kvemo Svaneti region. Despite the fact that the lowest average salaries are in other regions, Racha-Lechkhumi and Kvemo Svaneti generates less wealth per unit of GEL.

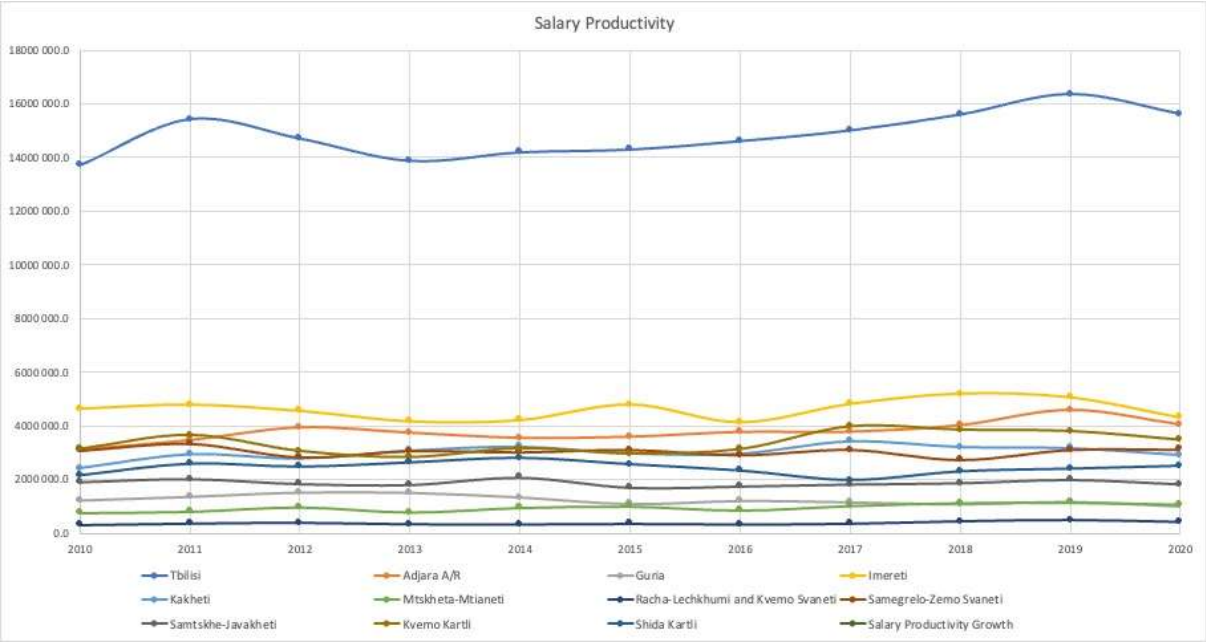

Figure 3. Productivity by Average Salary

Figure 4 shows the growth rate of productivity by average salary. The highest positive change rate occurred in Kvemo Kartli in 2017, in Kakheti in 2011 and in Mtskheta-Mtianeti in 2014. The 19.09% increase in Mtskheta-Mtianeti is response to the previous year's decrease by 21.15%. Changes in Kakheti and Kvemo Kartli regions

are caused by access to new markets of the regions' main industries – agriculture. Besides drastic decrease in Mtskheta-Mtianeti, Guria and Samtskhe-Javakheti also had negative changes in productivity, both in 2015. In Guria, in-depth analysis shows cash outflow in neighbouring region – Adjara A/R and in Samtkhe-Javakheti, still emigration in the main factor of productivity fall.

Figure 4 - Productivity by Average Salary Growth Rate

5. Conclusion

Our analysis has some shortcomings and limitations, which lay the groundwork for more detailed studies in this direction in the future. First and foremost, our analysis relies primarily on demographic data. Future research could use employment and firm distribution data, which are more relevant to economic development, to compare the economic impact of spatial structure as measured by different city attributes. On the other hand, although the economic scale of this study is mainly at the prefectural level, future research could focus on the economic impact of spatial structures within urban centres or at the regional level. Although our analysis mainly focuses on the economic impact of urban spatial structure, future research could also examine its impact on other aspects of socioeconomic development. Experience over the past decade has clearly shown that rolling dice is not the best option. Especially in a situation where Georgia's resources are scarce. In addition, it is necessary to formulate and pursue a consistent strategy without conflicting elements. To do this, we need to analyse individual sectors and their peculiarities in more detail. We need to know which industries have the potential to expand and which industries have the potential to increase productivity. Analysis should reflect national, regional and international conditions and experiences, as well as current and future global developments.

A country's economic development must be based on free market principles, a prerequisite for a strong private sector. Therefore, the government's economic policy based on the principle of free market aims at the further development of the private sector and the resolution of the problems of the private sector on the one hand, contributes to the strengthening of the private sector and contributes to the creation of jobs in the private sector. increase. On the one hand, it promotes the economic development of the country until it reaches the desired level, supporting the sections of the population that need it most. Georgia is a small, open economy. It is therefore inseparable from current events in the region and the global economy. However, a stable macroeconomic environment is important to mitigate the impact of external shocks.

Summarizing Georgia's strengths and weaknesses, the following picture emerges. Georgia stands out in comparison with developing institutions, infrastructure, labour market efficiency, low taxes and regulations, lack of exchange controls, low crime rate, and lack of bureaucratic procedures for starting and running businesses. competitiveness. I have a problem in the following areas: Protection of property rights, innovation, secondary and tertiary education, science and research production, level of competition in domestic markets, access to finance, skilled labour, public confidence in politicians, and political instability.

References

Aarstad, J., Kvitastein, O. A., & Jakobsen, S.-E. (2016). Related and unrelated variety as regional drivers of enterprise productivity and innovation: A multilevel study. *Research Policy, 45*(4), 844-856.

Böckerman, P., & Maliranta, M. (2007, March 1). The micro-level dynamics of regional productivity growth: The source of divergence in Finland. *Regional Science and Urban Economics, 37*(2), 165-182.

Bartelsman, E. J., & Doms, M. (2000). Understanding productivity: Lessons from longitudinal microdata. *Journal of Economic literature, 38*(3), 569-594.

Boarnet, M. G. (1998). Spillovers and the locational effects of public infrastructure. *Journal of regional science, 38*(3), 381-400.

Cardona, M., Kretschmer, T., & Strobel, T. (2013). ICT and productivity: Conclusions from the empirical literature. *Information Economics and Policy, 3*(25), 109-125.

De la Fuente, A. (2010, June). Infrastructures and productivity: an updated survey. Dirección General de Presupuestos.

Falcıoğlu, P. (2011). Location and determinants of productivity: The case of the manufacturing industry in Turkey. *Emerging Markets Finance and Trade, 47*(5), 86-96.

Gamtenadze, Z. (2021, June). Analysis of Investment Attractiveness of the Georgian Regions. *Economics and Business, XIII*(2).

Gilles, D. J., & Puga, D. (2003). Micro-foundation of urban agglomeration economies in Henderson. *Regional and Urban Economics, 4*.

Kangasharju, A., & Pekkala, S. (2001, March 12). Regional economic repercussions of an economic crisis: a sectoral analysis. *Valtion taloudellinen tutkimuskeskus VATT*.

Redding, S. (1996). The low-skill, low-quality trap: Strategic complementarities between human capital and R & D. *The Economic Journal, 106*(435), 458-470.

Rosenthal, S. S., & Strange, W. C. (2004, January 1). Evidence on the nature and sources of agglomeration economies.