



Analysis of the Standard of Living of the Population of The Republic of Uzbekistan

**Usmanov Akram
Ahmadjanovich**

Doctor of Philosophy in Economics, Associate Professor, Fergana Polytechnic Institute, Fergana, Uzbekistan
E-mail: a.usmanov@ferpi.uz

**Mukhsinova Shakhrizoda
Odiljon qizi**

Student, Faculty of Production Management, Fergana Polytechnic Institute, Fergana, Uzbekistan
E-mail: shahrizada724@gmail.com

ABSTRACT

In the article, studying various studies of the influence of the service sector on the gross regional product of the Fergana region, the share of the service sector in GRP was studied. The data showed that the main share of the service sector was 64.00% in 2010, which is a high figure compared to the following years. The lowest rates are 45.67% and 46.5% in 2015-2016. The analysis using a distributed lag, using the example of the Fergana region, showed which years had a positive and negative impact on the gross regional product and what needs to be done for the government through the digitalization of the economy. The author analyses the structure of the service sector for 11 years and proposes some measures for the optimal solution of problems with a microeconomic policy in the example of the Fergana region.

Keywords:

gross regional product, time series, lag variables, distributed lag, regression, Republic of Uzbekistan, services sector, Fergana region, economic analysis.

Introduction

In today's economy, services play an important role in determining the pace, structure and scope of development. The development of the economy in the service sector is the main problem that one has to face when it comes to attracting investment to the state.

The relevance of this article is the optimal solution to problems to improve services, which is an integral part of the gross regional product in the example of the Republic of Uzbekistan. The article considers the structure and content of the impact of services on the gross regional product of the Republic of Uzbekistan and government measures.

Literature review

The service sector is a fairly well-studied area for the country's economy, but the development of new problems that contribute to a decrease in the growth rate of the economy of a particular country requires new methods of solution. So, while it is worth studying the existing studies, which creates certain limitations to the study. Many specialists have

their point of view, assuming and analysing economic resources in their scientific works.

These are the works of scientists from the domestic country such as Khadzhiev B. D., Mambetzhano K. K., from the CIS countries such as Balabanova G. G., Zhuravleva L. I., Nosova S. S., Vechkanov G. C. and from distant foreign countries such as N. G. Mankiw and others. Also, modern scientists such as Raimzhanova M. [15], Ignatenko V. V. [8], Lazareva E. V. [9], Mukhamatzyanova N. I. [11] and others.

Research methodology

The methodological basis of the study is research, analogue, mathematical, and situational approaches, as well as methods of logical and comparative analysis, correlation analysis, mathematical analysis, observation methods and statistical methods.

Analysis And Results

In a modern economy, the standard of living of the population plays an important role in determining the pace, structure and scale of

development. The development of the economy to the living standards of the population is the main problem that one has to face when it comes to attracting investment to the state. This raises the problem of the development of macroeconomic policy. This problem is solved within the framework of the development and research of branches of macroeconomic policy. The gross regional product represents the sum of the values of goods created for final consumption in a particular region. The gross regional product is the central indicator of the system of national accounts. Accounting for economic transactions in the system of national accounts is carried out in prices at the time of their completion (in current prices). GRP is calculated at current basic prices and constant prices. The basic prices include the production prices of the industry and the number of subsidies on products, but do not include taxes on products. Gross regional product is a general indicator of the economic activity of the region, characterizing the process of production of goods and services for final use [10-13].

The study of the dynamics of the service sector and GRP - can be formulated by constructing a regression equation. Building a relationship between these variables will make it possible to predict the trend in the future, give an analytical review of the processes taking place in the economy, and form an idea of the dynamics of certain macroeconomic indicators. When studying this indicator, the value of GDP at the current time t is formed under the influence of several factors that acted at past times $t-1, t-2, t-3, \dots, t-l$. The value l , which characterizes the delay in the impact or factor on the result, is called a lag in econometrics, and the time series of the factor variables themselves, shifted by one or more points in time, are called lag variables.

Econometric modelling characterizing such processes is carried out using models containing not only current but also lag values of factor variables. These models are called distributed lag models. View model:

$$Y_t = a + b_0 * x_t + b_1 * x_{t-1} + b_2 * x_{t-2} + e \quad (1)$$

is an example of a distributed lag model.

The general view of the distributed lag model can be represented as follows:

$$Y_t = a + b_0 * x_t + b_1 * x_{t-1} + b_2 * x_{t-2} + \dots + b_p * x_{t-p} + e \quad (2)$$

The current and lag values of the factor variable have different effects on the resultant variable of the model. The quantitative strength of the relationship between the result and the values of the factor variable, related to different points in time, is measured using the regression coefficient for the factor variables.

Therefore, the model of the dependence of the coefficients b_j on the value of the lag j in the form of a polynomial can be written as follows:

For a 1st degree polynomial: $b_j = c_0 + c_1 * j$

For a 2nd degree polynomial: $b_j = c_0 + c_1 * j + c_2 * j^2$

For a 3rd degree polynomial: $b_j = c_0 + c_1 * j + c_2 * j^2 + c_3 * j^3$

For k -th degree polynomial: $b_j = c_0 + c_1 * j + c_2 * j^2 + c_3 * j^3 + \dots + c_k * j^k$

Substituting in (1) the found values of b_j , carrying out some rearrangements, we get:

$$Y_t = a + c_0 * (x_t + x_{t-1} + x_{t-2} + x_{t-3} + \dots + x_{t-l}) + c_1 * (x_{t-1} + 2x_{t-2} + 3x_{t-3} + \dots + lx_{t-l}) + c_2 * (x_{t-1} + 4x_{t-2} + 9x_{t-3} + \dots + l^2x_{t-l}) + \dots + c_k * (x_{t-1} + 2^k x_{t-2} + 3^k x_{t-3} + \dots + l^k x_{t-l}) + e \quad (3)$$

Let us denote the terms in parentheses at c_j as new ones:

$$\begin{aligned} Z_0 &= x_t + x_{t-1} + x_{t-2} + x_{t-3} + \dots + x_{t-l} \\ Z_1 &= x_{t-1} + 2x_{t-2} + 3x_{t-3} + \dots + lx_{t-l} \\ Z_k &= x_{t-1} + 2^k x_{t-2} + 3^k x_{t-3} + \dots + l^k x_{t-l} \\ Z_2 &= x_{t-1} + 4x_{t-2} + 9x_{t-3} + \dots + l^2x_{t-l} \end{aligned} \quad (4)$$

Let us rewrite model (3) taking into account (4)

$$Y_t = a + c_0 * z_0 + c_1 * z_1 + c_2 * z_2 + \dots + c_k * z_k + e \quad (5)$$

Using the above, we will build an econometric model with distributed lags that describes the relationship between macroeconomic indicators of GRP and the service sector of the regional economy of the Republic of Uzbekistan. For this purpose, we will build the following table:

Table 1. Data on the service sector and GRP (trillion sums)

<i>years</i>	<i>GRP, at</i>	<i>Services, x</i>
2010	5.11	3.27
2011	6.86	4.12
2012	8.68	4.60
2013	10.43	5.29
2014	13.03	6.60
2015	15.70	7.17
2016	17.29	8.04
2017	19.84	9.73
2018	26.61	13.61
2019	31.82	18.66
2020	36.54	21.61

- GRP at constant prices calculated using the use method, in prices of the previous year, national currency, trillion sum. (taken round);
 - Services;
 - Statistical data of the Republic of Uzbekistan for January 2021.
- Using the data from this table, we compile the following calculation table.

Table 2. Intermediate calculations for finding the parameters of the regression model

<i>years</i>	<i>GRP, yt</i>	<i>Services(xt)</i>	<i>Z0</i>	<i>Z1</i>	<i>Z2</i>
2010	5.11	3.27			
2011	6.86	4.12			
2012	8.68	4.60			
2013	10.43	5.29			
2014	13.03	6.60	23.87	39.91	113.01
2015	15.70	7.17	27.77	47.45	135.05
2016	17.29	8.04	31.70	54.62	154.72
2017	19.84	9.73	36.83	63.33	180.74
2018	26.61	13.61	45.15	73.71	211.97
2019	31.82	18.66	57.21	85.87	239.62
2020	36.54	21.61	71.65	107.24	289.32

$$a=5,12$$

$$C_0=0,001$$

$$C_1=0,006$$

$$C_2=0,017$$

The calculation of the parameters of the regression equation by the usual least squares (5) for our example leads to the following results:

$$Y_t = 5,12 + 0,001 * z_0 + 0,006 * z_1 + 0,017 * z_2 + e$$

Using the found regression coefficients for variables z_i , $i=1,2,3$ and relations (2), we calculate the regression coefficients of the original model:

Using the formula 3 and using the above data (a, c_0, c_1, c_2) we find the following:

$$B_0 = 0,001 + 0,006 * 0 = 0,001$$

$$B_1 = 0,001 + 0,006 * 1 + 0,017 * 2 = 0,042$$

$$B_2 = 0,001 + 0,006 * 1 + 0,017 * 4 = 0,076$$

Using formula 2 we get:

$$Y_t = 5,12 + 0,001 * x_t + 0,042 * x_{t-1} + 0,076 * x_{t-2} + e$$

As a result of the regression analysis, we identified the following coefficients of influence: growth in the service sector by 1 trillion sums in the current period will lead in 4 years to GDP growth on average by $(1 + 42 + 76) = 119$ billion sums.

This indicator is not significant for 4 years, which should focus on its development. The main factors are:

- scientific-technological revolution (STR), contributing to scientific-technical and technological progress;
- increase in per capita income;
- the desire of people to improve their quality of life;
- increase in free time;
- urbanization of the population;
- demographic situation;
- a complication of consumer demand, which also leads to the need for the emergence of new services.

From the above directions, to optimally solve the problems of increasing the share of services in the gross regional product of the Fergana region, it can be noted that the main attention should be paid to scientific and technological progress due to the digitalization of the country's economy, as well as the allocation of additional funds for the development of new service sectors.

Conclusion

Thus, the gross regional product is the sum of the values of goods created for final consumption in a particular region, which is the central indicator of the system of national accounts. The study of the dynamics of the service sector and GRP - can be formulated by constructing a regression equation using a distributed lag on the example of the Fergana region of the Republic of Uzbekistan. The data showed that the share of services from 2010 to 2015 decreased significantly from 64% to 45.67%. Only since 2016, the share of the service sector gradually began to increase from 46.5% to 59.14% by 2020. With the help of a distributed lag, the structure of the service sector was analysed and it was revealed that in the next 4 years the number of services relative to GRP will increase by 119 billion sums. Therefore, this suggests that to optimally solve the problems of increasing the share of services in the gross regional product of the Fergana region, it can be noted that the main attention should be paid to scientific and technological progress due to the digitalization of the

country's economy, as well as the allocation of additional funds for the development of new areas services.

References

1. Бюджет для граждан 2021. Ташкент. 2021.
2. Курпаяниди, К. И., & Мухсинова, Ш. О. (2021). Анализ уровень жизни населения Республики Узбекистан. *Экономика и бизнес: теория и практика*, (9-1), 154-159.
3. Гордиевич, Т. И., & Рузанов, П. В. (2020). Уровень жизни и динамика доходов населения. *Омский Научный Вестник. Серия «Общество. История. Современность»*, (1), 127-135.
4. Игнатенко, В. В. (2021). Методика оценки эффективности регулирования уровня жизни населения. In *Экономика и управление в условиях современной России* (pp. 106-112).
5. Лазарева, Е. В. (2020). Оценка качества и уровня жизни населения в муниципальном образовании город Краснодар. In *Экономика и управление: актуальные вопросы теории и практики* (pp. 258-262).
6. Рахмоназаров, П. Й. (2020). Ways to improve the management of economic and environmental systems. *Экономика и предпринимательство*, (7), 442-446.
7. Rakhmonazarov, P., & Akhunova, M. (2019). Theoretical aspects of sustainable development of regional economic ecosystems and assessment methods. *Scientific Bulletin of Namangan State University*, 1(8), 136-143.
8. Rakhmonazarov, P. Y., & Usmonov, A. A. (2021). Analysis of ecological indicators of territories. *Innovative Technologica: Methodical Research Journal*, 2(10), 6-14.
9. Рахмоназаров, П. Й., & Халилов, А. (2018). Пути совершенствования организацией управления эколого-экономическими системами территории. *Актуальная наука*, (11), 26-28.

10. Raxmonazarov, P. Y. (2021). Hududiy iqtisodiy-ekologik tizim tavsifi VA uning barqarorligi. *Oriental renaissance: Innovative, educational, natural and social sciences*, 1(11), 517-521.
11. Rakhmonazarov, P. (2021). Evaluation of efficiency of management of sustainable development of economic and ecological systems. *Актуальные научные исследования в современном мире*, (2-7), 63-67.
12. Raimjanova, M. , Sabirova, L. , Khanova, N. , Asamkhodjaeva, S. , & Nosurullaev, K. (2021). Impact of investments on the economy of the Republic of Uzbekistan and the importance of its geographical location. In *E3S Web of Conferences* (Vol. 244, p. 10042). EDP Sciences.
13. Margianti, E. S., Ikramov, M. A., Abdullaev, A. M., Kurpayanidi, K. I., & Misdiyono, M. (2020). Role of goal orientation as a predictor of social capital: Practical suggestions for the development of team cohesiveness in SME's. Monograph. Gunadarma Pulisher, Indonesia