



## **Analysis of factors affecting Labor Demand in Non-Government Sector**

### **Ganiev Bakhtiyor Zulfikor ugli**

PhD student of Tashkent State University of Economics,

e-mail-[baxtiyor.ganiyev@bk.ru](mailto:baxtiyor.ganiyev@bk.ru),

### **Karimova Latofat Sadullayevna**

Assistant teacher, “Fundamental economics” department, “Economics” faculty of Tashkent State University of Economics,

e-mail-[latofkarimova@gmail.com](mailto:latofkarimova@gmail.com),

### **Shomurodov Tokhir Boymurod ugli**

Phd student of School of Economics, Beijing Technology and Business University, China  
(Senior lecturer, “Fundamental economics” department, “Economics” faculty of Tashkent State University of Economics)

Email – [tohirbek0206@gmail.com](mailto:tohirbek0206@gmail.com)

### **Quziyeva Gulnoza Rashidovna**

Assistant teacher, “Fundamental economics” department, “Economics” faculty of Tashkent State University of Economics

Email – [gulnoza199@tsue.uz](mailto:gulnoza199@tsue.uz)

### **Rahmonov Bekzod Sharibjon ugli**

Assistant teacher, “Fundamental economics” department, “Economics” faculty of Tashkent State University of Economics,

Email – [rbsh@gmail.com](mailto:rbsh@gmail.com)

**ABSTRACT**

The article analyzes the statistics on the factors affecting the demand for labor and makes recommendations and suggestions to increase the demand for labor using the OLS method. In contrast to previous studies, this research seeks to analyze impact of various factors on employment in non-government sector. An increase of one percent in the interest rate will reduce the number of workers in the private sector by 0.307 units. The inverse relationship between interest rate and the number of workers in the real sector obtained and it is more statistically significant than results of previous papers.

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**Introduction**

In the context of changes in any economy, it is important to increase and analyze the demand for labor. Studying the existing problems related to reducing unemployment and providing the population with a stable source of income, the importance makes it necessary to increase the number of enterprises that are important players in the economy, creating a demand for labor. This will require a variety of monetary influences on existing and new businesses.

To increase the demand for labor in the country, it is necessary to analyze the impact of the ratio of loans to the economy to GDP, consumer price level, interest rate and GDP growth rate on the number of people employed in the real sector.

Labor demand is the amount of labor that employers want to hire at a certain wage rate over a period of time. The demand for labor as a factor of production is a derivative demand, in which labor is created not for itself, but for its contribution to the production of goods and services.

The unemployment rate has an upward trend, reaching its highest level in 2019 (57,900). There has been no significant change in the number of jobs in the public sector, but we can see some fluctuations in the private sector. Over the past period, employment in the non-governmental sector has been growing but not stable. It can be said that at a time when the population is growing rapidly, sustainable employment in the non-governmental sector is one of the most pressing issues.

GDP growth has a downward trend, declining by 4.5 times in 2020 compared to 2014. The central bank's interest rate has risen, averaging 15% over the past three years, almost 6% higher than in previous years. The volume of loans to the private sector has increased despite high interest rates.

It was found that if interest rates cannot be reduced, then unemployment benefits should be lowered. A more rigid labor market, it was further found, can deliver expansionary effects, especially during the crisis period. [1] (P.Lastauskas., J.Stakėnas, 2020).

We find that reforms can have shortrun recessionary effects, despite being expansionary in the long run. Estimates from a panel VAR for OECD countries provide empirical support for this result. Moreover, market deregulation has sizable effects on the efficiency of business cycle fluctuations.

E-mail address: info@researchparks.org

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Increased flexibility in both goods and labor markets lowers the level and volatility of the inefficiency wedges that distort agents' equilibrium decisions, leading to a substantial reduction in the welfare cost of business cycles. Nevertheless, individual reforms produce contrasting effects [2] (M. Cacciatore, G. Fiori, 2016). Importantly, reforms do not have noticeable deflationary effects, suggesting that the inability of monetary policy to deliver large interest rate cuts in their aftermath – either because of the zero bound on policy rates or because of the membership in a monetary union – may not be a relevant obstacle to reform. Alternative simple monetary policy rules do not have a large effect on transition costs [3] (M. Cacciatore, R. Duval, G. Fiori, F. Ghironi, 2016). All in all, restrictive monetary policies enacted from an independent central bank and other determinants of real interest rates appear to play a more important role in explaining unemployment than institutional factors [4] (Baccaro, L., Rei, D., 2007).

Real interest rate shocks, defined as the difference between the 10-year nominal government bond yield and the annual GDP price inflation. A rise in real interest rates affects negatively capital accumulation and labour productivity, thereby reducing labour demand (at a given wage level) and increasing unemployment [5] (Bassanini, A., Duval, R., 2006). The shocks or baseline variables consist of the level of TFP growth, the real interest rate, the change in inflation and labour demand shifts (essentially the log of labour's share purged of the impact of factor prices). With the exception of the change in inflation, these 'shocks' are not mean reverting which is why we prefer the term baseline variables. These variables are driving unemployment [8] (Nickell, S., Nunziata, L., Ochel, W., 2005).

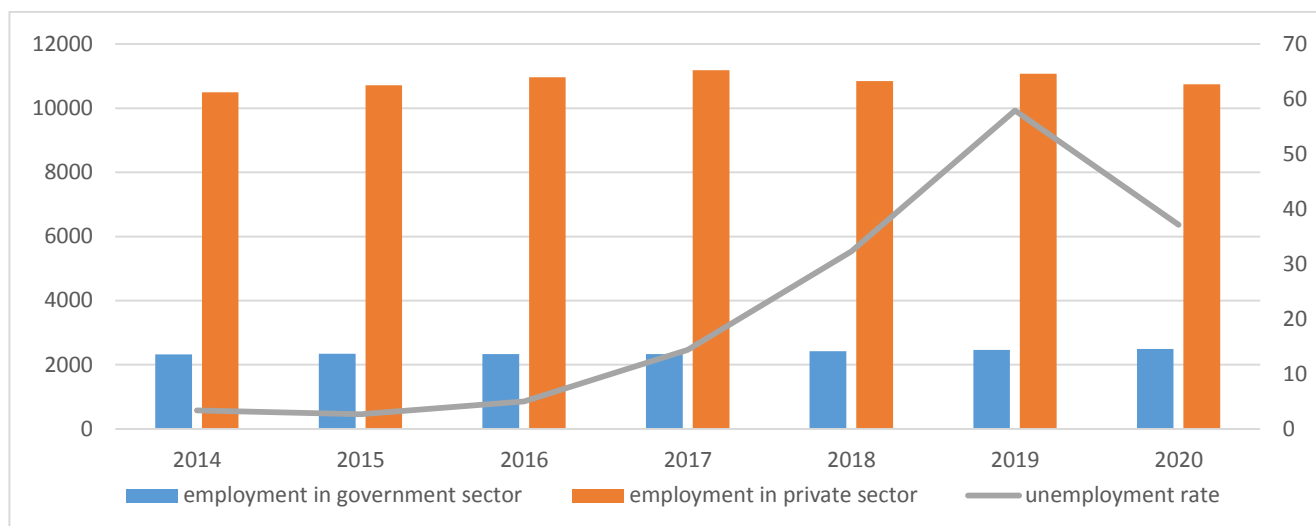
There are various assumptions that the real interest rate may affect labor market performance. For example, according to the [9] (Phillips 1994) consumer market model, aggregate demand increases the interest rate. The reduction in product supply reduces the demand for labor. According to Blanchard [10] (1999), an increase in real interest rates reduces the investment of enterprises in new workers. This will reduce unemployment and increase unemployment.

Additional demand for labor is the excess of total demand for labor in a particular time, including newly created jobs, for workers in the national economy through international labor contracts in foreign countries receives quotas for recruitment [11] (Mamarahimov B.E. 2013).

Despite the fact that different models have been used in theoretical research and different transmission mechanisms have been analyzed, all researchers agree that an increase in the real interest rate will have a negative impact on the labor market. The above-mentioned scholars have also conducted national and international research on the subject.

The impact of monetary policy on the labor market is usually analyzed using data collected at the macro level. Some participants in the labor market can easily be replaced by cheaper labor, possibly foreign workers [12] (Firpo et al., 2011), while others can be easily replaced by capital.

### **Current labor market dynamics and economic trends of Uzbekistan**



**Fig-1. Recent trends of employment by types of ownership and unemployment (in thousand)**

Source: the State Statistics Committee database

Interestingly, it can be seen from the Figure-1, unemployment rate increased dramatically while there were quite positive trends in employment in public and private sectors over the given period.

**Table-1** (in percent)

Years	2014	2015	2016	2017	2018	2019	2020
GDP growth rate	7.2	7.4	6.1	4.5	5.4	5.8	1,6
Interest rate	10	9	9	9	14	16	14
Consumer price index	6,1	5,6	5,7	14,4	14,3	15,2	11,1
Credit to private sector ratio to GDP	10,6	10,8	12,4	16,6	23,8	30	32.1

Source: Central Bank, the State Statistics Committee and ESCAP World Bank database

### Methodology and data

This paper employs data on factors of employment in private sector of Uzbekistan between 2010 and 2020 and is based on data from the State Statistics Committee of the Republic of Uzbekistan, the Central Bank of the Republic of Uzbekistan and the World Bank.

Main subject of this paper is to examine varying the effects of the variables on employment in non-government sector in Uzbekistan for a given period. Relying on our expectations, there is a negative relationship between employment in private sector and interest rate while the other regressors such as GDP growth and credits to private sector represent positive correlation.

This article analyzes the factors affecting employment in the private sector, such as interest rate, GDP growth rate, consumer price index, and the ratio of loans to the private sector to GDP, using OLS method:

$$LnE_t = Ln\beta_0 + \beta_1 LnIR_t + \beta_2 LnGDPG_t + \beta_3 LnCPI_t + \beta_4 LnPSC_t + Ln\theta_t$$

$t = 2010, 2011, 2012, \dots, 2020$

$LnE_t$ : The number of workers in the private sector in year  $t$ .

$LnIR_t$ : Interest rate.

$LnGDPG_t$ : GDP growth rate.

$LnCPI_t$ : consumer price index.

$LnPSC_t$ : Credit to private sector ratio to GDP.

**Results and discussions**

We can see in **Table (2)** regression results have shown expected signs. The main independent variable interest rate showed its anticipated result. A percentage increase in interest rate will reduce Uzbekistan's employment in non-government sector volume by 0.307 unit and, its relationship with employment in private sector is negative and significant. At the same time, two other variables, **LGDPG** and **LPSC** showed positive correlation to the employment.

**Table-2**

**Regression results of the model**

	<b>LIR</b>		<b>LGDPG</b>		<b>LCPI</b>		<b>LPSC</b>		<b>_cons</b>	
<b>LE</b>	-0.307 *	(0.0368)	0.0768*	(0.0225)	-0.000332	(0.0256)	0.0115 *	(0.00173)	9,690	(0.0847)
<b>N</b>	<b>11</b>		<b>11</b>		<b>11</b>		<b>11</b>			

Standard errors in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Table- 3 shows the results of normality test of Skewness and kurtosis. Results exhibit that employment in non-state sector (LE) and interest rate (LIR) variables are normally distributed in the model with 0,344 and 0,3226 probabilities respectively.

**Table-3**

**Skewness/Kurtosis tests for Normality**

<b>Variable</b>	<b>Obs</b>	<b>Pr(Skewness)</b>	<b>Pr(Kurtosis)</b>	<b>Adj chi2 (2)</b>	<b>joint Prob&gt;chi2</b>
<b>LE</b>	11	0.1808	0.8719	2.13	0.344
<b>LIR</b>	11	0.8607	0.1694	2.26	0.3226
<b>LGDPG</b>	11	0.0006	0.0022	14.42	0.0007
<b>LCPI</b>	11	0.3706	0.1221	3.67	0.1595

<b>LPSC</b>	11	0.077	0.9972	3.62	0.1634
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### Conclusion

This article analyzes the factors affecting the amount of employment in non-state sector of Uzbekistan. It uses a variety of tests, and an OLS regression method. The obtained results are similar to the previous literature, but some unexpected results were observed.

In particular, similar to the results previous literature, interest rate has negatively affected on the amount of employment in non-state sector of Uzbekistan. However, the result shows more positive and stronger correlation compared with the impact of an increase in the real interest rate is somewhat smaller in developing countries[14] (Feldmann, 2012) between them.

Nevertheless, our main variable, employment interest rate, showed a negative and significant result, as expected. In recent years, the Uzbekistan`s government has implemented various reforms on inflation target, which in turn has led to an increase in unemployment. However, lots of work remains to be done in order to reduce unemployment. These include provide or creation of competitive environment and favorable monetary conditions, to decrease inflation rate and to increase the number of companies which make vacancies.

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