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EMPLOYMENT TRENDS AND MACROECONOMIC INTERACTIONS

The paper analyses employment and other labor market indicators, as well as it dwells upon the effects of the other macroeconomic trends in the Republic of Armenia.

The ARIMA - high-flexibility model of the integrated time-regression floating average methodology was used to predict employment rate.

Comparisons were made between regional countries as well as other developed and developing economies. The research focuses on the issues of the state employment policy, as well as the recent crisis phenomena caused by the COVID-19 pandemic, and attempts to give guidelines for solving the problems raised. The paper presents the developments in the labor market of the Republic of Armenia in the medium term, based on the results obtained. It highlights the priorities of the Republic of Armenia in the field of employment and the ways of their implementation.

Keywords: *employment, labor market, government policy, macroeconomic correlated indicators*

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Introduction. One of the most important components of the internal policy of any welfare state is social policy and its best balance to economic policy, which assumes the implementation of comprehensive measures aimed at positive developments in macroeconomic indicators, employment, improving the quality of

life of the population, implementing various target programs for vulnerable groups.

In accordance with the RA Law on Employment, the government adopts state employment strategy and program. The program is the main blueprint for the development and implementation of state employment policy. Naturally, as required by law, the program of state employment regulation and the active labor market programs must be based on the objective results of comprehensive, in-depth analysis of the labor market, carried out at least annually. In this context, the best design and implementation of the possibly efficient and innovative state employment development solutions are of high importance.

Due to the pandemic, the negative tendencies registered in the RA labor market, and especially the great uncertainties of their further manifestation are a real challenge in the field of employment. These challenges are primarily relevant to low-income employees, the long-term unemployed, settlements with a lower than average republican level of economic development and, finally, can be revealed as real new factors in poverty and deepening social tensions. In these conditions, due to the current unprecedented challenges in the labor market, at the core of which are the socio-economic consequences of the new COVID-19 pandemic and the objective issues of their prevention and eradication, the analysis of labor market employment indicators becomes relevant, especially in the macroeconomic context.

The purpose of this paper is to comprehensively analyze the labor market and employment indicators of the Republic of Armenia, clarify the macroeconomic correlations of these indicators, and propose possible solutions for the implementation of positive employment developments.

To achieve the above objectives the following problems have been defined and solved.

- Cross impact analysis of employment, labor market developments, and other macroeconomic indicators
- Identification of state employment policy, labor market activation problems
- Presentation of possible solutions for the development of employment, labor market activation

Literature review. Many economists have discussed and clarified such concepts as employment, unemployment, and other labor market issues over time. Numerous studies indicate that the labor market plays a central role in the process of socio-economic development. Sustainable and secure employment is one of the basic ways to get out of poverty and promote growth. Despite this important role of the labor market in the economy, in many developing countries low productivity, low wages, inadequate access to social security and employment support, as well as inequality among women, young people, and certain groups in society continue to be the case.

In many developing countries employment by sectors has undergone significant structural changes. According to Kraay and Van Rijckeghem,¹ the share of public employment in the formal sector was about 23% and 28% in 1981-1992. In Latin American countries, according to the data of 2018, public sector employment in total employment averages 11.9%, slightly lower than in 2011 - 12.3%, and in Organisation for Economic Cooperation and Development (OECD) countries it reached 21.1%.² According to OECD data, the share of the public sector employment has been declining in the last few years, reaching 17.9% in 2020. There are still countries where the share of the public sector employment remains high (Sweden 28.6%, Denmark 27.6%, Iceland 24.9%).³

Empirical studies highlight that economic growth tends to be positively associated with job creation. Khan estimates that the employment elasticity of GDP growth in developing countries is 0.7.⁴ At the global level, Kapsos⁵ states that for every 1-percentage point of additional GDP growth, total employment has grown between 0.3 and 0.38% in 1991 and 2003.

While economic growth and job creation are interrelated, it is important that growth should occur in the sectors that have the potential to absorb labor at a large scale. Some sectors and activities are more employment-intensive than others. Basnett and Sen identify an extensive body of evidence that suggests that growth in manufacturing and services has a particularly positive impact on employment.⁶ The impact of GDP growth on employment in agriculture is found to be limited overall, while value-added growth in the agriculture sector has a relatively large impact on employment. For textiles, the body of evidence is small, but the study suggests that growth positively contributed to job creation. For agribusiness and food processing, the authors find a positive impact of growth on employment. Melamed, Hartwig and Grant⁷ state that growth in services is becoming relatively more important in driving employment than manufacturing. The authors looked at research on 24 growth episodes dedicated to the 1980s, 1990s and 2000s, and there was evidence of the impact of employment in different sectors. In 18 sectors, poverty had fallen, in 15 out of which there had been an increase of employment in services, in ten - an increase in industrial

¹ Kraay, A., & Rijckeghem, C.V. (1995, August). Employment and wages in the public sector: a cross-country study. *SSRN Electronic Journal*. DOI:10.2139/ssrn.883218

² OECD. (2020). *Government at a Glance: Latin America and the Caribbean 2020*, OECD publishing, Paris, <https://doi.org/10.1787/13130fbb-en>

³ Source: www.stats.oecd.org

⁴ Khan, A.R. (2007, July). *Growth, employment and poverty: An analysis of the vital nexus based on some recent UNDP and ILO/SIDA studies*. DESA Working Paper No. 4. https://www.un.org/esa/desa/papers/2007/wp49_2007.pdf

⁵ Kapsos, S. (2005, August 10). *The employment intensity of growth: Trends and macroeconomic determinants*. Employment Strategy Papers, 2005/12. https://www.ilo.org/wcmsp5/groups/public/-/ed_emp/-emp_elm/documents/publication/wcms_143163.pdf

⁶ Basnett, Y., & Sen, R. (2013, September). *What do empirical studies say about economic growth and job creation in developing countries*. Overseas Development Institute. https://assets.publishing.service.gov.uk/media/57a08a2340f0b652dd0005a6/Growth_and_labour_absorption.pdf

⁷ Melamed, C., Hartwig, R., & Grant, U. (2011, May). *Jobs, growth and poverty: what do we know, what don't we know, what should we know?*. Overseas Development Institute. <https://cdn.odi.org/media/documents/7121.pdf>

employment, and in six cases - an increase of employment in agriculture. Similarly, Kapsos finds that historical global employment elasticities by economic sectors are the highest in services (at 0.61 percent).⁸

Basu and Nag show the relationship between macroeconomic policy, activation of the financial market, and employment growth. The paper shows that the balanced budget fiscal expansion, capital account liberalization, and agricultural expansion lead to expansion of the industrial sector as well as the level of employment.⁹

In terms of the impact of COVID-19, the International Labor Organization's study raises concerns about the disproportionate impact of COVID-19 and shows that there are five primary vulnerable groups: employed population in informal sector, and in the deepest sectors of the crisis, youth, women, and low-skilled workers.¹⁰ Fazzari and Needler conclude that the macroeconomic effects of the epidemic could be a deepening of inequality, a reduction in consumption, and aggregate demand, which would slow economic growth.¹¹

Armenia still has a tangible space to improve active labour market policy. According to Duncan Campbell, Per Ronnås and Arman Sargsyan, Armenia has suffered from a serious deficiency of productive jobs ever since the collapse of the Soviet economy in the early 1990s. For a long time, this deficiency took both the form of an absolute shortage of employment opportunities in the domestic economy and large numbers of working poor. The past decade saw a marked fall in working poverty, while the quantitative deficits of jobs remained very high. Indeed, despite economic growth, the number of people employed in the domestic economy fell until a few years ago, while close to a fifth of the labour force has remained unemployed. These large deficits of domestic employment opportunities persisted despite an absence of demographic supply pressure on the labour market and can largely be ascribed to systemic structural weaknesses in the economy that emerged after the collapse of the earlier Soviet economy. The preceding three years saw significant growth of non-agricultural employment, resulting from the very positive economic development (Table 3). Indeed, the contrast between labour market developments in the past few years and previous decade is quite remarkable and suggests a positive trend break. Yet, the overall conclusion must be that the human and labour resources in Armenia were still severely underutilised as the Covid-19 pandemic hit the Armenian economy and labour market, despite the labour market improvements in the past few years.¹²

⁸ Kapsos, S. (2005, August 10). *The employment intensity of growth: Trends and macroeconomic determinants*. Employment Strategy Papers, 2005/12. https://www.ilo.org/wcmsp5/groups/public/-ed_emp/-emp_elm/documents/publication/wcms_143163.pdf

⁹ Basu, M. & Nag, R.N. (2020). Open economy macroeconomics of commodity price fluctuation, sectoral inter-linkage and employment., *Journal of Economic Studies*, 47(6), 1467-1494. <https://econpapers.repec.org/article/emejespps/jes-11-2018-0399.htm>

¹⁰ International Labour Organization. (2020, April 30). *Essential labour force survey content and treatment of special groups*. https://www.ilo.org/wcmsp5/groups/public/-dgreports/-stat/documents/publication/wcms_741145.pdf

¹¹ Steven, M.F. & Needler, E. (2021, March). US employment inequality in the great recession and the COVID-19 pandemic. *Institute for new Economic Thinking, Working Paper 154*. <https://doi.org/10.36687/inetwp154>

¹² Campbell, D. R., & Sargsyan A. (2020, October). *A rapid assessment of the employment impact*

Methodology. The methods of statistical, mathematical, comparative, structural, and econometric analysis were used in the framework of this research.

Annual and quarterly time series of employment, unemployment, other labor market-related indicators as well as other macroeconomic correlated indicators were used. The research covers the changes taking place in the RA labor market from 2014 to 2021, as well as connections with the changes in macroeconomic indicators.

Publications of the Statistical Committee of the Republic of Armenia for 2014-2021, reports on the activities of the RA State Employment Agency (SEA), the RA Law on Employment, publications of international organizations such as International Labor Organization, the World Bank, Eurostat, the European Bank for Reconstruction and Development and other research papers were used. The study used time series of indicators such as the number of employed and unemployed people, employment and unemployment rates, average monthly salary series, etc. The latter, as a result of using different statistical methodologies by the RA Statistical Committee had comparability issues. In order to avoid this problem, the authors used adjusting method and obtained connecting coefficient for the series.

Modified versions of ARIMA class models ARIMAX were used. In addition to ARIMA components, ARIMAX contains seasonality and exogenous variables. As a result, the authors found that the explanatory variable is related to the time series components and the exogenous variable.

Analysis. Unemployment as an endogenous economic phenomenon is closely linked to different market elements. When the economy is inactive and can not create enough jobs, the production of goods and services is insufficient, which causes the decrease in economic growth.

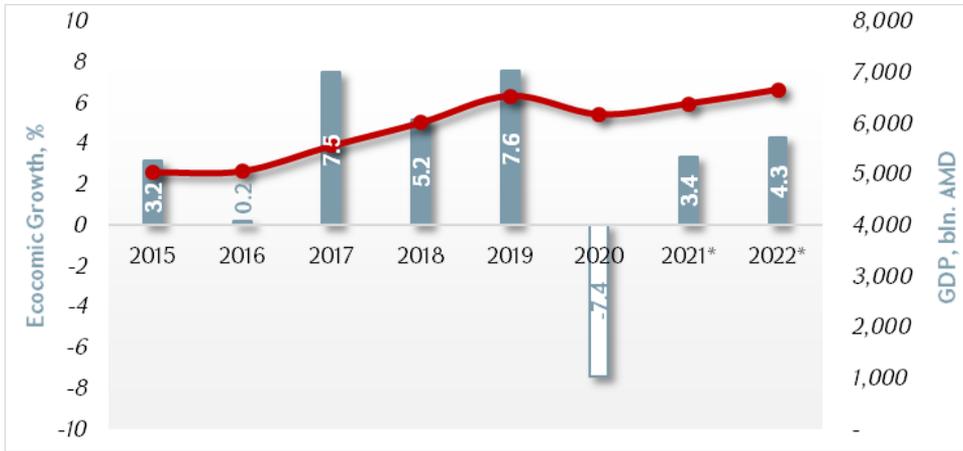
In the long term, starting from the early 1990s until 2008, Armenia had essentially stable and high economic growth. The global financial crisis of 2008 and the effects of the 2020 pandemic as well as hostilities had a more severe impact on Armenia's macroeconomic situation, as a result of which GDP growth was sharply reversed.

In 2015-2019, the GDP in Armenia had a stable growth tendency. The average growth rate was 4.7%, the maximum growth rate of 7.6% was registered in 2019. In 2020, due to the mentioned effects, 7.4% economic downturn was registered (Figure 1), while the global economy declines by -3.2% in 2020, with a recovery of 5.9% projected for 2021.¹³

and policy responses of the Covid-19 pandemic on Armenia.

https://www.ilo.org/wcmsp5/groups/public/-europe/-ro-geneva/-sro-moscow/documents/publication/wcms_762029.pdf

¹³ Jackson, J.K., Weiss, M.A., Schwarzenberg, A.B., Rebecca M. Nelson, R.M., Sutter, K.M., & Sutherland, M.D. (2021, November 10). *Global economic effects of COVID-19*. US Congressional Research Service. <https://sgp.fas.org/crs/row/R46270.pdf>



* - For 2021-2022, the World Bank forecast is shown.¹⁴

Figure 1. Dynamics of RA GDP and economic growth in 2014-2022. billion AMD

The analysis of forecasts shows that the recovery of Armenian economy in 2020 will neutralize the negative macroeconomic impacts in the medium term, and 7.4% decline in 2020 will be restored by the results of 2022. As a result of the 2021-2022 overall positive impact, taking 2020 as the base year, the recovery rate will increase by 7.85%. Returning to the pre-shock stage, GDP rehabilitation in 2022 will be about 1.9% compared to 2019.

In the following Figure, real growth rate of the economy of the Republic of Armenia in the longer run is shown (Figure 2).

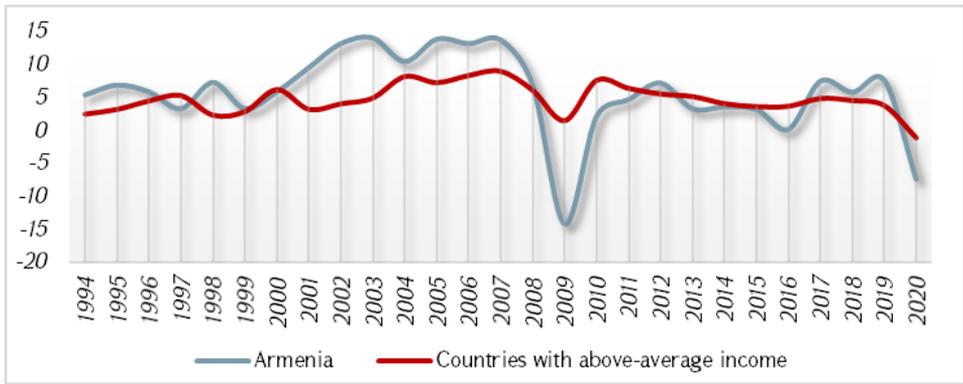


Figure 2. Dynamics of real GDP growth in Armenia in 1994-2020, %¹⁵

Figure 2 shows that Armenian economy is more fluctuating than in the rest countries, with above-average growth. From the mid-1990s to 2008, the GDP per capita in Armenia more than tripled, as a result of the significant economic growth.¹⁶ The GDP growth rate reached a record high level of 14% in 2003,

¹⁴ Source: [Armenia Overview \(worldbank.org\)](https://www.worldbank.org/en/country/armenia/overview#3) - <https://www.worldbank.org/en/country/armenia/overview#3>

¹⁵ Source: Statistical Committee of the Republic of Armenia

¹⁶ This summary is based on on the Asian Development Bank (ADB) Advanced Analysis – Economic analysis. Basic research.

which was the basis for the most optimistic experts to describe the Republic of Armenia as a "Caucasian tiger".¹⁷ However, the global financial and economic crisis of 2008 hit this trend sharply. Stable growth trend was registered in 2013-2015, making an average of 3.3%. In 2016, real GDP growth slowed to 0.2%. In 2018, 5.2% growth was registered, which is 2.3 percentage points lower than in the previous year. In 2019, compared to the previous year, the real GDP growth rate was 7.6%. Taking into consideration the negative impacts on the observed macroeconomic environment as a consequence of COVID-19, in the first quarter of 2020 macroeconomic indicators still had inertial growth tendencies. GDP amounted to 1,267,151 million AMD, which is by 2.02% higher than the GDP of the comparable period of 2019. In the first quarter of 2020, GDP increased by 3.8% compared to the previous quarter. However, COVID-19 as well as military clashes in Artsakh continuously had a negative impact on the economy. Already starting from the second quarter, which coincides with the outbreak of the pandemic, the economy registered a decline of about 13.7%, and in the third and fourth quarters, the decline was about 9%. Finally, according to the data published by the Statistical Committee for 2020, the rate of economic decline was as much as last year's growth - 7.6%. According to the forecast of the Central Bank of Armenia in 2021, the economic growth should form 4-5%. As of April 2021, the World Bank forecasts 3.4% GDP growth in Armenia in 2021, and 4.3% - in 2022.¹⁸

According to the analysis of 2021 first-quarter data, the negative effects of COVID-19 and the Artsakh war were still maintained in the economy. In particular, the volume of GDP, at the prices of the previous year is about 1,226,131 million AMD, which declined by -1.37% compared to the same period of 2020. However, starting from the second quarter of 2021, positive tendencies of recovery are observed in the economy, which is reflected in the economic activity index. In April and May 2021, the economic activity index was 123.2% and 110.9%, respectively, compared to the same period of the previous year.¹⁹ On annual basis, it should be noted that the economic activity index is significantly correlated with economic growth, and, in 2020, the index is 92.5%, with a decline of 7.5%.

During 2015-2020, active structural changes were registered in the RA economy (Table 1). The share of agriculture in GDP decreased year by year (by about 5.2 percent point) and in 2019, this Figure forms 12.0% of GDP. The employment rate in the agricultural sector in 2019 is about 23% which is about 5 percentage points lower than the same indicator of the previous year. According to the data of 2020, the share of agriculture has again decreased to 11.7%. In contrast to agriculture, the spheres of manufacturing, financial and insurance activities, healthcare, social services, culture, entertainment and recreation increased. As can be seen from Table 1, there is a large decline in the construction sector: in case of that in 2015 construction accounted for about 9.4% of GDP, in 2020, the level decreased to 6.8% but the number of people

¹⁷ S. Mitra and others (2007, March). *The Caucasian tiger. Sustaining economic growth in Armenia*.

World Bank. <https://doi.org/10.1596/978-0-8213-6811-4>

¹⁸ Source: [Armenia Overview \(worldbank.org\)](https://www.worldbank.org)

¹⁹ Source: [Statistical Committee of the Republic of Armenia](https://www.statcomittee.am)

employed in construction did not fluctuate significantly, and according to the data of 2020, continues to be almost 5%.

Table 1

Shares of selected sectors of the economy in GDP 2015-2020²⁰

	2015	2016	2017	2018	2019	2020
Agriculture, forestry, and fishing	17.2	16.4	15.0	13.9	12.0	11.7
Mining	2.1	2.6	3.3	2.8	2.8	3.4
Manufacturing (processing)	9.2	10.3	10.6	11.3	11.7	12.4
Supply of electricity, gas, and steam	4.6	4.5	4.1	3.5	3.2	3.5
Construction	9.4	7.8	7.3	6.6	6.2	6.8
Wholesale and retail trade. repair of vehicles	10.9	9.8	11.1	11.5	11.5	10.8
Telecommunication	3.4	3.5	3.3	3.2	3.3	3.7
Financial and insurance activities	3.9	4.4	4.9	5.5	5.9	6.7
Real estate activities	8.7	8.6	7.8	7.6	7.5	7.1
Public administration, compulsory social insurance	4.8	4.9	4.7	4.4	4.4	5.4
Education	2.9	3.0	2.7	2.6	2.3	2.6
Health care	3.9	4.1	4.2	4.3	4.7	5.7
Culture, entertainment, and leisure	3.2	4.6	4.6	5.6	6.5	5.1

Jobs are crucial to overall well-being. There is a need for job growth in Armenia, as well as jobs that are more in line with the methodology set by the ILO Institute for Decent Work, to increase overall welfare, reduce poverty and inequality, and facilitate the transition to a modern, globally integrated economy. We need to respond to the challenges of the world - only these changes can become new opportunities - serve as a powerful tool for poverty reduction.

Starting from the 2010 slow decline, in 2017 the poverty rate decreased sharply up to 25.7%, mainly due to the improved economic growth. The same trend was registered in 2018 when economic growth was 5.8%, and poverty decreased to 23.5%. In 2019, the poverty rate increased to 26.4%. Comparing the level of poverty with economic growth, the Figure also shows a certain negative correlation, which is more obvious in the case of long-term series (Figure 3).

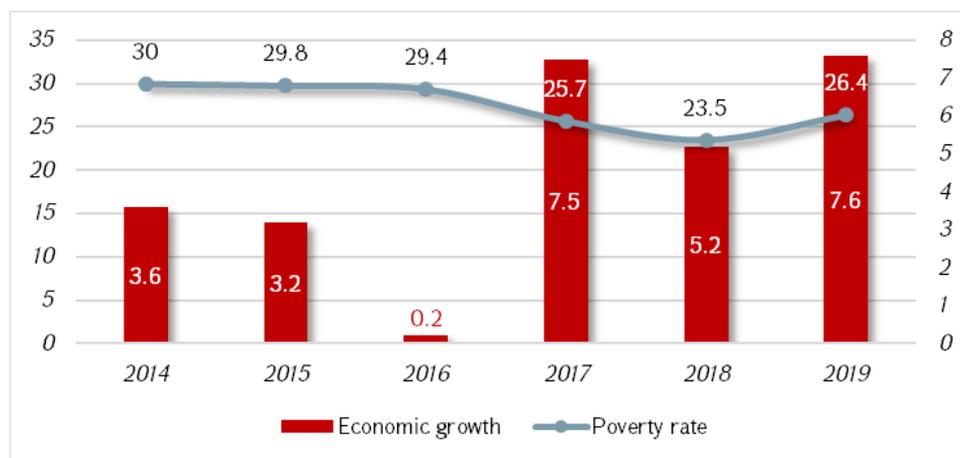


Figure 3. The poverty rate and economic growth in Armenia 2014-2019²¹

²⁰ Source: Statistical Committee of the Republic of Armenia

As the majority of employees are hired workers, whose main source of income is wages, in the context of income policy, the wage policy is of high importance.

It is a remarkable positive circumstance that the ratio of the minimum wage to the average wage in Armenia has increased from 39.4% to 44.1% since 2015-2020 (Figure 4). On the other hand, the average salary has grown steadily and the average growth rate in the observed period was 2.1%.

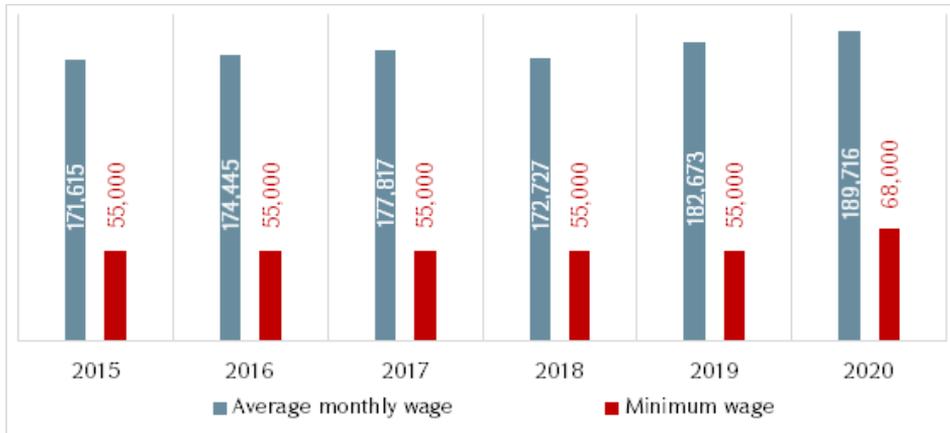


Figure 4. Minimum wage and average nominal wage, 2015-2020, AMD

The dynamics of the average monthly nominal wage in 2021, as well as the percentage change over the same period of the last year are shown in Figure 5.

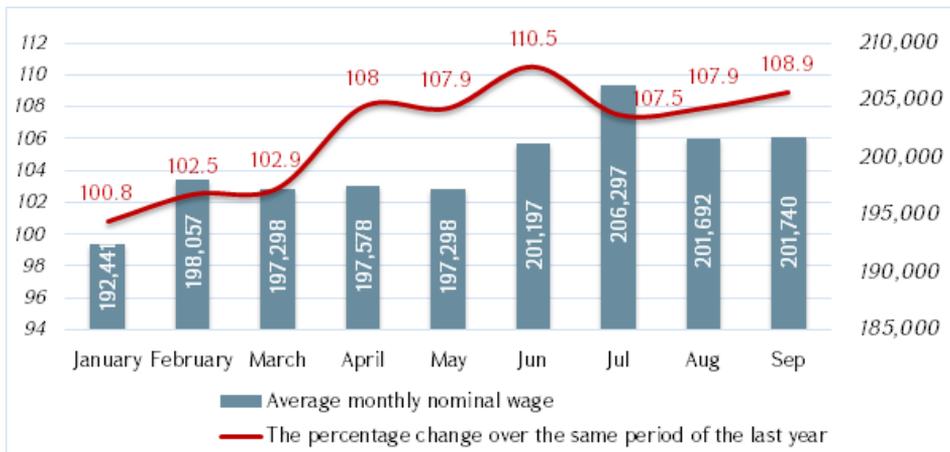


Figure 5. Changes in the average monthly nominal wage in 2021

Figure 5 shows that during 2021 average monthly nominal wages increased by 6.3% compared to the same period in 2020. At the same time, it should be noted that if we look at the average monthly nominal wage by sectors, we can see that as of November 2020, the average wage in the non-public sector is higher (17.4%) than the average wage in the public sector.

²¹ Poverty rates are calculated using the 2009 methodology.

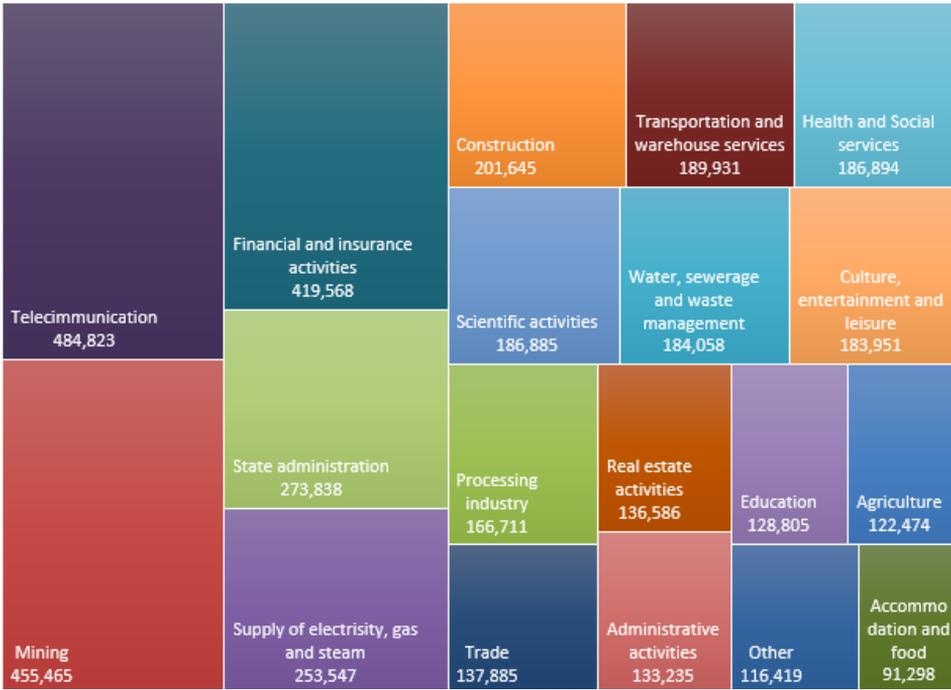


Figure 6. Average monthly nominal wages by types of economic activity, 2021 May

The study of the average monthly nominal wages by types of economic activity shows that as of May 2021, the lowest average nominal wage is in public food sector, and top four sectors are information, communications, finance, mining and public administration. The average nominal salary of IT workers reaches around 644 thousand AMD (Figure 6). The Figure stresses the reason of Gini coefficient, showing income inequality that remains high in Armenia.

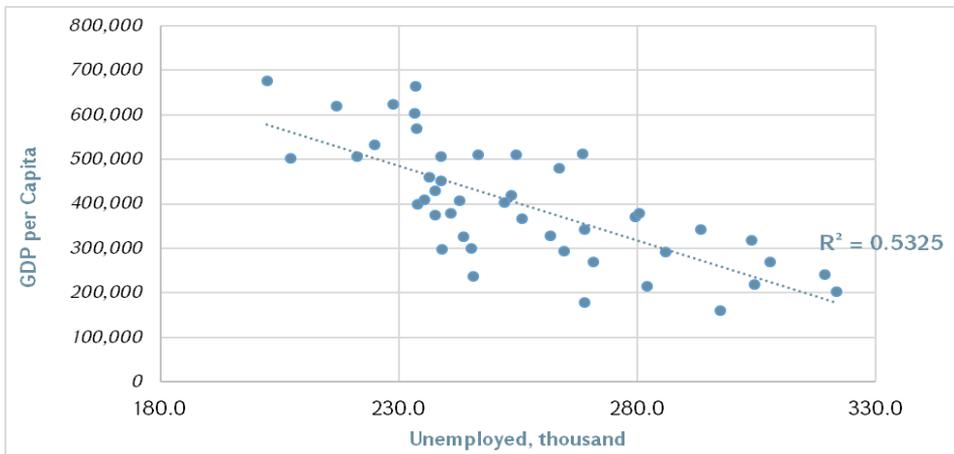


Figure 7. Correlation between the number of the unemployed and GDP per capita, 2008-2020 (quarter data)

The GDP factor is a key in the development of the employment sector in Armenia. It is noteworthy that in 2008-2020 the econometric analysis of the

quarterly series shows a high negative correlation of the number of the unemployed per capita GDP, forming -0.73. This result implies that not only economic decline reduces unemployment, but also that the likelihood of being employed significantly depends on the expectation of job benefits from the public and there is a certain limit of salary below which the public in Armenia is not significantly inclined to be employed.

For the relationship modelling between GDP and unemployment, the ARIMAX model was used, with autoregressive, integrated, moving average and exogenous variables. The basis for the selection of the model was the IMF designed model (IMF, 2018).²² IMF offers the following approach for modelling of labor force and GDP relationship.

$$U_t = c_1 + c_2 \times GDP_t + c_3 \times control_variables_t + \varepsilon_t, \quad (1)$$

where:

U_t - unemployment rate in t period,

GDP_t - real GDP in t period,

$control_variables_t$ - the group of other influential/control variables.

According to the same approach, the results of the modelling GDP and unemployment relationship are as follows:

ARIMA (1,0,0) (0,0,0) [4]

$$\widehat{U}_t = 315,4 - 0,05466 \times \widehat{GDP}_t + 0,3483 \times \widehat{U}_{t-1}. \quad (2)$$

The dependent variable of the model is the number of the unemployed. The regressors of the model are the real GDP (million AMD) and the first lag of the number of unemployed. The coefficient of elasticity is -0.26.

The result shows that the 1% GDP growth in Armenia supposes a 0.26% reduction in the number of the unemployed. According to Kapsos, employment elasticity in Armenia was 0.24 between 1999-2003, so the inclusiveness of growth improvement is not actually tangible. Kapsos also showed that the global elasticity is 0.38, which is again far away from Armenian Figure.²³

Table 2

Labour productivity in Armenia in 2019 and 2020 (estimated)

	2019	2020
Employed population	1,010,425	990,975
GDP, mln AMD	6,551,850	6,183,742
Labour productivity, AMD(annual)	6,484,251	6,240,059
Labour productivity, USD	13,502	12,753

Source: Calculated by authors using official statistics data.

Table 2 shows that the decline of productivity with AMD in 2020, comparing to 2019 is 3.7%. As in GDP growth, labor productivity also still remains below the pre COVID-19 baseline at the end of 2021. It is estimated that productivity will be

²² Khatat, M.EL H. (2018). *Monetary policy and models of currency demand*. International Monetary Fund, WP/18/28.

²³ Kapsos, S. (2005, August 10). *The employment intensity of growth: Trends and macroeconomic determinants*. Employment Strategy Papers, 2005/12. https://www.ilo.org/wcmsp5/groups/public/-ed_emp/-emp_elm/documents/publication/wcms_143163.pdf

12,509 USD, which is even below that of the 2020 Figure, which can have a tangible recovery during the second and third quarters of 2021.

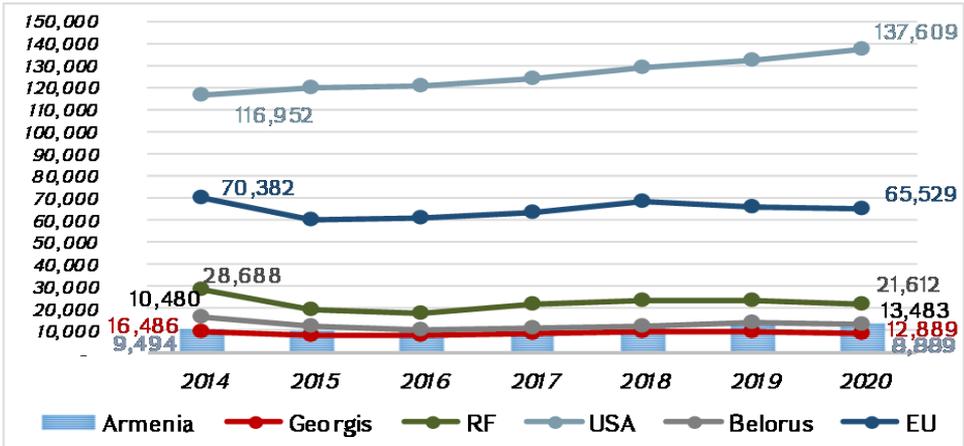


Figure 9. The volume of GDP per employee from 2014 to 2020, USD²⁴

Figure 9 shows the volume of GDP per employee in Armenia, Russia, Georgia, the United States, Belarus, and EU. As we can see, the US index is unsurpassed for the countries under review. According to the data of 2020, the US index is twice higher than the second highest EU member states, 6 times - than the index of Russia and about 10 times - than the index of Armenia. In other words, we can conclude that the result of 1 employee in the US is about 10 times more efficient than in Armenia. Since 2017, the index of the Republic of Armenia has shown a growing tendency: the average annual growth rate is 8%. In Belarus, the average growth rate is 6.8% and since 2019, it has lagged behind the index of Armenia. Georgia has the most modest rate among the countries under observation: the average annual growth rate is about 2.4%.

From 2014 to 2020, population and labor resources and, consequently, labor force decreased from year to year, respectively, by an annual average of -0.32%, -2.1%, and -4.6% (Figure 10).

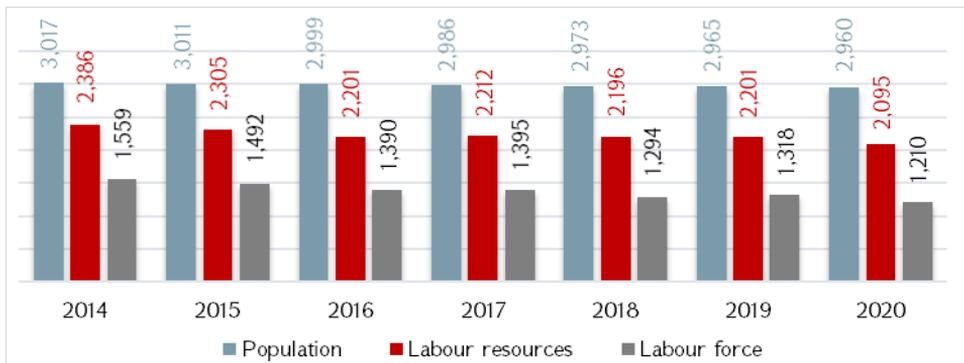


Figure 10. Population, labor resources and labor force²⁵

²⁴ The calculations were performed by the authors

²⁵ 2020 data is initial and unadjusted by residents.

The number of the employed tends to decrease slightly and the average annual decrease rate is -0.2%. In the case of the unemployed, the change is more abrupt and on average forms -2.9% (Figure 11).

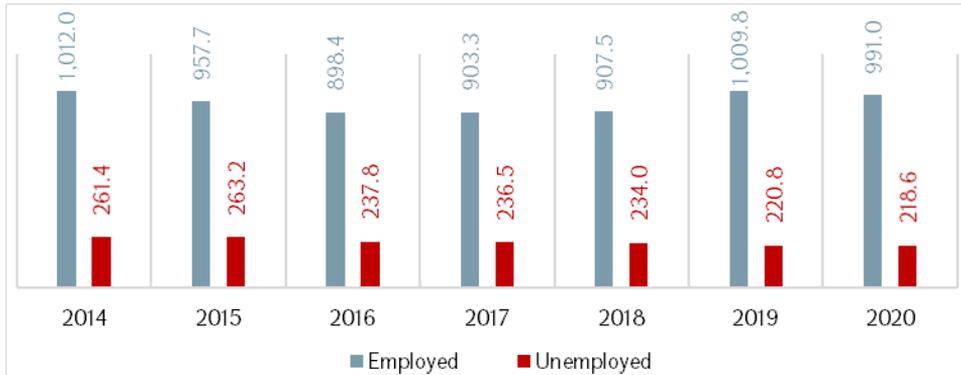


Figure 11. Dynamics of the employed and unemployed in 2014-2020²⁶

If between 2015 and 2020, the economy in Armenia grew by an average of 2.3% per year, the number of employed people decreased by an average of 3% during the same period (Figure 12). In high-income countries, in general, there has been a sharp decline in employment and growth positive correlation since the financial crisis. Thus, in the post-crisis years, the elasticity was 0.5%, and in the after-crisis period it forms 0.18.²⁷ Even in this case, the low and even negative elasticity of employment in Armenia is significantly polarized.

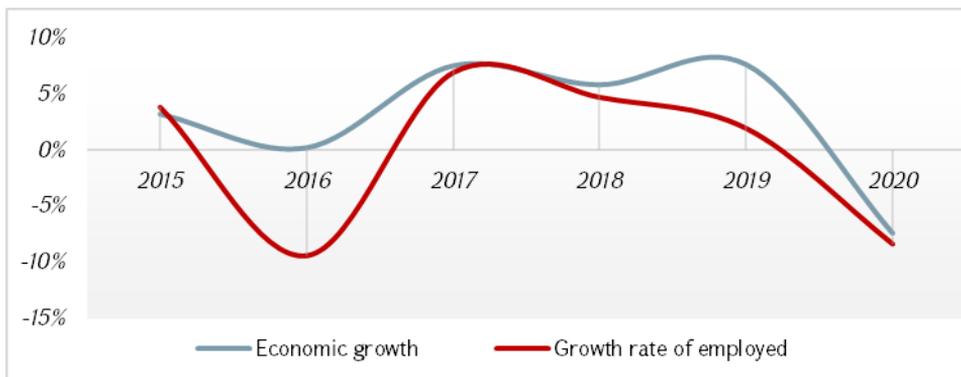


Figure 12. Employment growth rate and economic growth dynamics from 2015 to 2020, %

In Armenia, the transformation of the employment structure is taking place at a rather slow pace (Figure 13). As a result, the share of the employed in agriculture is still high, forming 22% in 2019. In other countries with a GDP per capita level of Armenia, only about 10-15% of the labor force is usually engaged in agriculture, and the employment consists of hired workers or the self-employed

²⁶ The sample weights are not adjusted according to the current census of the RA de jure population.

²⁷ D. Merotto, D. Weber, M., & Aterido, R. (2018). Pathways to better job in IDA countries. Finding from job diagnostics. The World Bank. *Jobs Series; No. 14*. <http://hdl.handle.net/10986/30594>

who work in non-agricultural sectors. This kind of high rate is another sign of the weak economy.

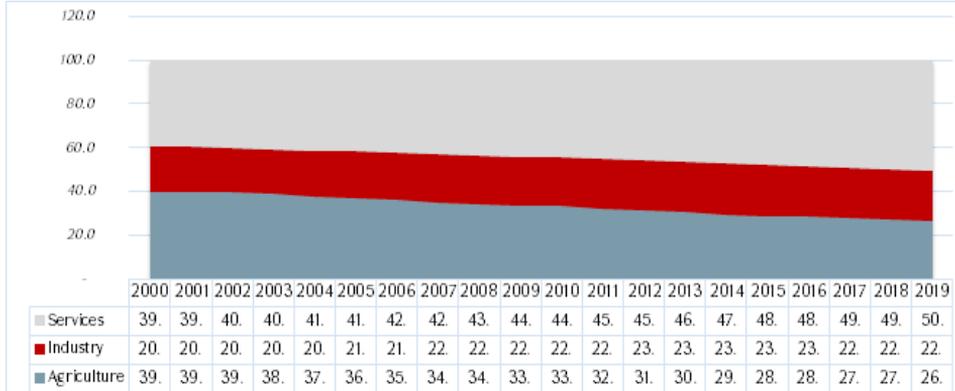


Figure 13. Structural changes in employment in the world by type of economic activity

The trend of the number of the employed in the last five years is negative in Armenia: the average annual decrease is 1.6%, while the number of the employed in the public sector in 2014-2019 increased by an average of 3% per year. According to 2019 data, employees in the public sector accounted for 24% of the total employed. Comparing to OECD countries, the same Figure is 17.9% in 2020 (OECD, 2020). The latter shows that public employment in Armenia is sharply overloaded which is unnatural, and better efficiency, better balancing of overall labour market are a must. The same report shows that some 2-3 countries have a higher share, close to Armenia, but those countries are mainly Scandinavian with stronger economies.

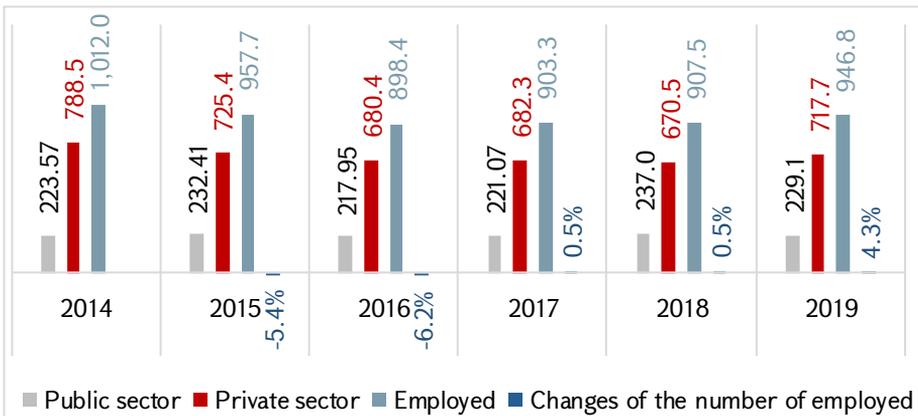


Figure 14. Employment dynamics by public and private sectors

The share of employed men in the total number of the employed is 54%, and women - 46%. Employment of men decreased by an average of 2% per year during the period under review, and in the case of women, the decline was more noticeable, forming 5%. As we can see, in 2019 the number of employed women

increased by about 25 thousand, compared to the number of employed men - about 5 thousand (Figure 15). Finally, the Figure shows that the gender gap increases over the years.

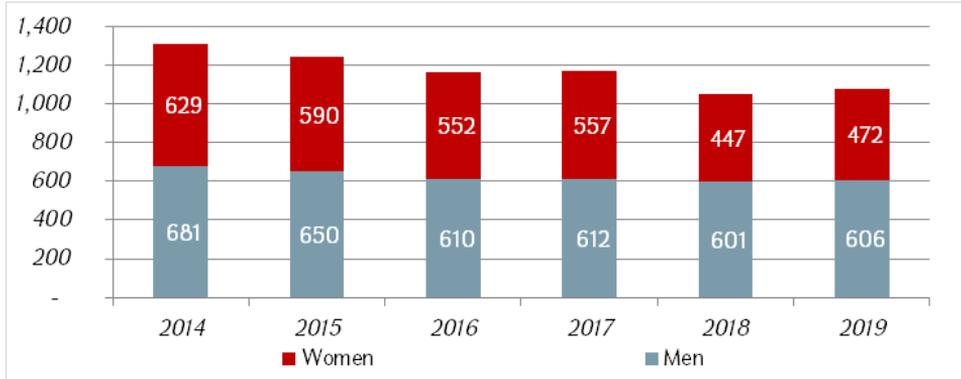


Figure 15. Employment by gender

Armenia is one of the highest in the world (13th) and in the region with the number of Not in Education, Employment, or Training (NEET). As Figure 16 shows, although Armenia has made significant progress in youth employment since 2018, NEET is still high compared to other two countries.

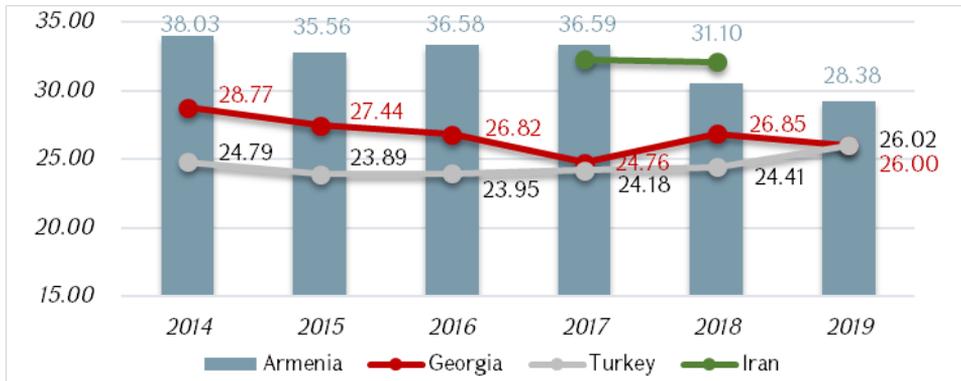


Figure 16. The proportion of NEET among total youth in regional countries, 2014-2019

The study of the employment dynamics by separate age groups shows that the employment of 15-19 aged people in 2014-2019 has an average annual growth of 1.6%, among young people aged 20 to 24 employment decreased by an average of 5.8% per year, among 25 to 29 years old the decrease formed 3.5% (Figure 17). In other words, we can conclude that youth employment has declined over the period under review. Almost no significant changes were observed among the 30-34 age group, and an average annual growth of about 1% was recorded among the 35-39 age group. There is a sharp decline among the 40-44 age group and the annual average of this group is -3.8%.

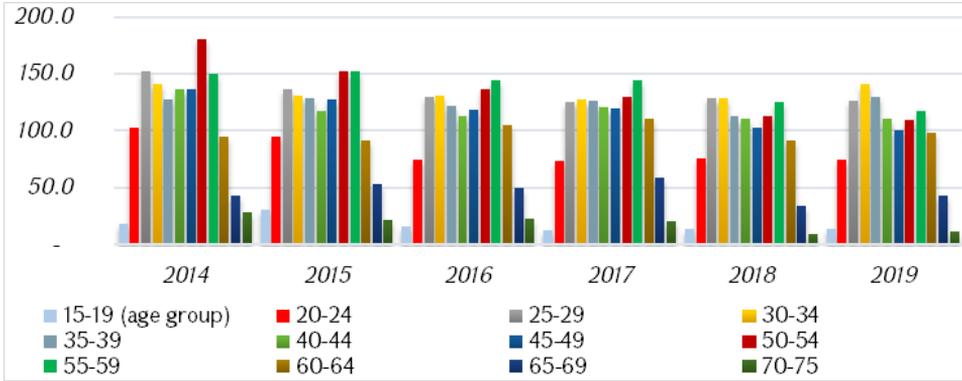


Figure 17. The employed by age groups, thousand people

Labor force participation, employment and unemployment rates show that in 2014-2020 the labor force participation rate decreased by 0.8%, employment rate increased by 0.6%, and the unemployment rate decreased by an average of 0.8% per year (Figure 18).

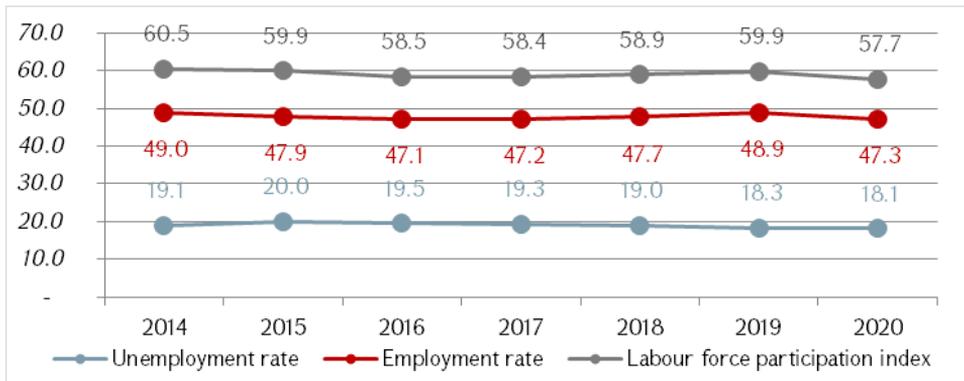


Figure 18. Labor force participation, employment and unemployment rates from 2014 to 2020, %²⁸

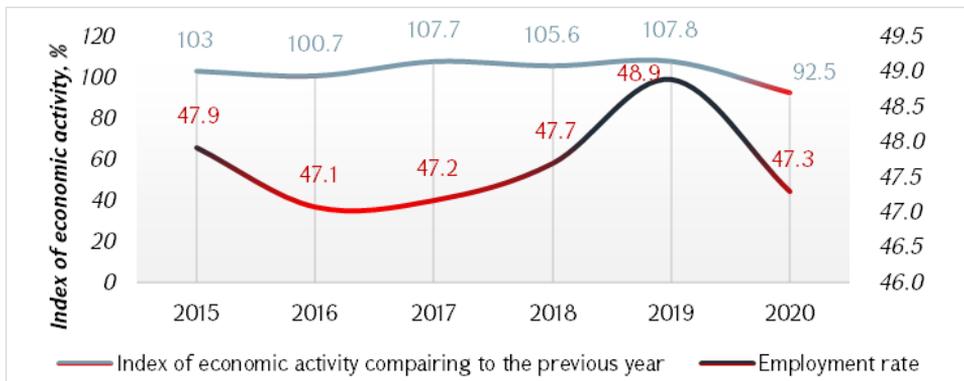


Figure 19. Employment rate and economic activity index from 2015 to 2020, %²⁹

²⁸ Data for 2020 is initial.

²⁹ Data for 2020 is initial.

In the dynamics of the economic activity index and the level of employment presented in Figure 21, certain patterns are also noticeable, especially the growth tendencies of 2016-2019 and synchronous decrease trend in 2020.

Regarding COVID-19 employment influences, we used World Bank “COVID-19 Business Pulse Survey”.³⁰ The data show that Armenia has one of the deeper employment impacts among 51 observed countries. The following Figure shows that Armenia has the worst index (-62%) among the selected countries and is at 45th place in 51 countries ranking.

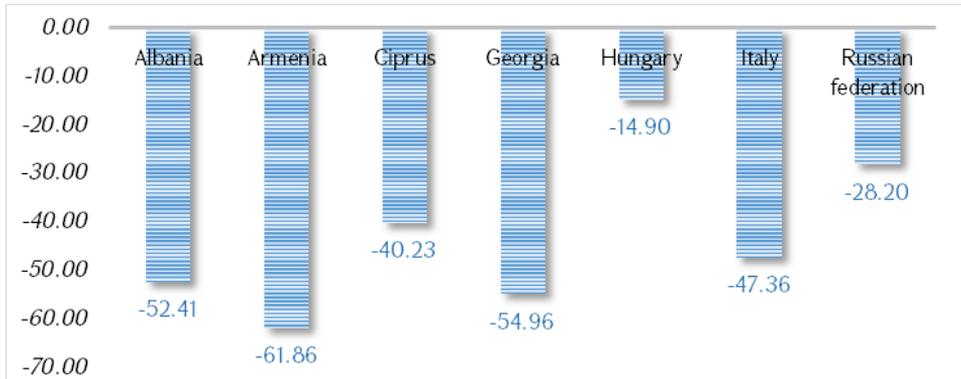


Figure 20. Average percentage change in monthly sales in 2020, compared to 2019

Figure 21 shows the share of establishments that fired workers in May 2020, and it is a logical continuation of sales shortage in the above Figure. Here again, around 12% of employers fired some staff during one month in Armenia. Among 51 countries, Armenia does not have a very bad position and is almost placed in the middle of the list.

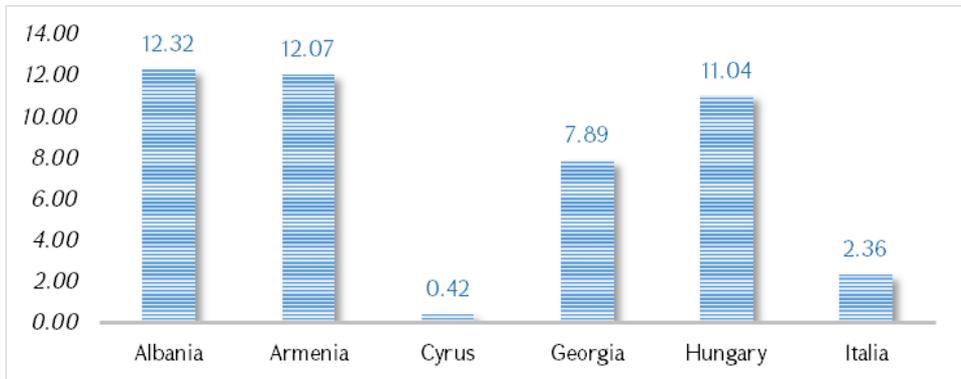


Figure 21. Share of establishments that fired workers in May 2020

Active labour market policy is one of the key influencing state institutions which can make development interventions and structural changes in labour market and somehow eliminate above presented destructions. The very first setup of active labour market policy framework was implemented in Armenia in 2006. Currently, the country has 14 ALMPs that have shown not very efficient

³⁰ [WB Business Pulse Survey, 2021.](#)

performance. In 2020, several changes in ALMPs have been made. A particular number of programs with low effectiveness were suspended, mainly related to the private job agencies' support and jobseekers' transportation support. Instead of excluded ALMPs, more beneficiary (social group) targeted ALMPs launched, directly targeting young women, people with disabilities. Responding to COVID-19, SEA launched online training course "How to find a job", which is important to serve soft skills especially to the first-time job seekers.

However, in 2019, only 3.2% of the registered unemployed were covered by ALMPs.³¹ Another issue is that planning of the ALMP's annual project is roughly estimated. Thus, in 2019, in around 7 planned ALMPs, the planned number of beneficiaries was around 60% overestimated than actual beneficiaries after implementation.

In general, institutional, informational and operational bases of the state employment policy are not yet fully provided. The mentioned framework is objectively necessary for the fully positive impact on the labour market rehabilitation. Without sufficient grounds, it is practically impossible to ensure the programmatic priorities derived from the main objectives of the employment policy.

Financing of policy implementation in Armenia is extremely low. The average share of state expenditures on social protection, where the employment expenses are included, forms 6.8% of GDP in Armenia. Moreover, starting from 2016, this indicator has tended to decrease. In 37 OECD countries, the average share of public spending on social protection is 20.1% of GDP. The lowest rate in OECD countries is 7.5% in Mexico and 31.2% - in France.³² The average index of the mentioned indicator in the EU countries is 19.2%.³³

IT solutions for the employment policy management are obsolete and incomplete. There is no complex IT system, inducing back office and front office (also online) business processes organization, automated monitoring, and digital report generation solutions. There is no online service provision solution, beneficiaries may visit SEA regional offices for registering and getting the service. This is also an obstacle in current COVID-19 situation.

ALMP's mainly do not let the same beneficiary be involved in the next program after the prior one in the same year, so there are limited possibilities for vulnerable jobseekers to have better results, for example, involving in training program and job placement program. ALMPs procedures and eligibility criteria are often very complicated and there is a lack of wide awareness rising media, with introducing of simplified rules and using up to date information channels, tools.

Another issue is that planning and management of ALMPs are not based on contemporary project management methodology and tools.

³¹ Source: www.armstat.am

³² Source: Social spending, OECD Data, 2018. <https://data.oecd.org/socialexp/social-spending.htm#indicator-Figure>

³³ Eurostat Statistics Explained. (2020). *Government expenditure on social protection*. https://ec.europa.eu/eurostat/statistics-explained/index.php/Government_expenditure_on_social_protection

Conclusions and recommendations. Ensuring high rates of development is a key issue for the economy of the Republic of Armenia, and one of the main factors directly affecting economic development is the effective use of labor potential.

There are a number of issues in the RA labor market, including high unemployment, low wages, unequal development of the labor market and economy by regions, weak development of labor market infrastructure.

Economic growth is not inclusive in Armenia. Econometric estimates of the relationship between employment indicators and GDP show that their reciprocal effects are not unequivocal, but for example, a 1% increase in GDP in Armenia implies only 0.26% reduction in the number of the unemployed. Armenia did not lead to job creation as the real GDP of the Republic of Armenia increased by 2.3% on average during the observed period, but, in contrast, the number of the employed decreased by 3%. Armenia is also facing a serious challenge due to youth unemployment. NEET in the total youth in the regional countries, Armenia has the worst indicator.

Public employment in Armenia is sharply overloaded which is unnatural, and better efficiency, better balancing of overall labour market are a must. The solution of raised problem is to increase labour productivity in public sector, which will also lead to the decrease of the number of employed people.

Thus, one can prove that the sphere of employment and labor is essentially problematic in Armenia, and in the short run, the continuation of negative tendencies is more probable. In this context, the consistent improvement of the main indicators of the labor market by the national policy is of high importance. National policy must be directed to the implementation of flexible and comprehensive state regulation, based on the comprehensive labor market situation, appropriate planning, and implementation of innovative tools.

State ALMPs need to be redesigned and aligned with the current state of the job market, current needs. Based on the planning and implementing differences, it is the case that ALMPs are still not very attractive both for employers and for job seekers. Employers must clearly see the set of benefits from the program. The same is for job seekers: many programs do not guarantee a high possibility of long-term and decent work.

There is a lack of flexible procedures from the National employment policy institution, rules, and capacity to respond quickly when agile changes are needed. National employment policy institutions could be more inclusive using quick and targeted solutions to respond to COVID-19 employment threats in addition to the government programs. For example, public works ALMP can be intensified as a COVID-19 quick response.

Innovative and comprehensive IT solutions both internal and online may be very efficient for better results, proactiveness and quicker response, and the new IT infrastructure may provide monitoring and evaluation, and reporting. A corporate IT platform may also help in decision making and have one single and comprehensive hub to connect all regional offices. Online platform for job seekers and employers is also one of the urgent solutions which can rapidly raise involvement level.

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ԱՐՄԱՆ ՍԱՐԳՍՅԱՆ

ՀՊՏՀ տնտեսական ինֆորմատիկայի և տեղեկատվական համակարգերի ամբիոնի դոցենտ, տնտեսագիտության թեկնածու

ԿԱՍՈ ԴԱՎԹՅԱՆ

ՀՊՏՀ տնտեսամաթեմատիկական մեթոդների ամբիոնի ասպիրանտ

Զբաղվածության միտումները և մակրոտնտեսական փոխանցությունները.

Սույն հոդվածում քննարկվել և վերլուծության են ենթարկվել ՀՀ զբաղվածությանը, գործազրկությանը և աշխատաշուկային առնչվող ցուցանիշները, կատարվել է նաև վերջիններիս ու մակրոտնտեսական այլ կոռելացված ցուցանիշների ազդեցությունների վերլուծություն: Զբաղվածության կանխատեսման նպատակով օգտագործվել է ժամանակային շարքերի կանխատեսման բարձր ճկունություն ունեցող «ARIMA»՝ ինտեգրված ավտոռեգրեսիայի լողացող միջինի մոդելը: Համեմատականներ են անցկացվել ինչպես տարածաշրջանային երկրների, այնպես էլ զարգացած և զարգացող այլ տնտեսությունների միջև: Հոդվածում անդրադարձ է կատարվել նաև զբաղվածության պետական քաղաքականության խնդիրներին, վերջին շրջանում COVID-19 համավարակով պայմանավորված ճգնաժամային երևույթներին, փորձ է արվել ներկայացնելու վեր հանված խնդիրների լուծման ուղեինիշները:

Աշխատանքում ներկայացվել են ՀՀ աշխատաշուկայի դրսևորած զարգացումները միջնաժամկետում, ստացված ար-

դյունքների հիման վրա առաջադրվել են գրադվածության ոլորտում ՀՀ առաջնահերթություններն ու վերջիններիս իրագործման ուղիները:

Հիմնաբառեր. գրադվածություն, աշխատաշուկա, պետական քաղաքականություն, մակրոտնտեսական ցուցանիշներ:

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Тенденции в сфере занятости и макроэкономическое взаимодействие. – В данной статье представлены и проанализированы показатели занятости, безработицы и рынка труда в Республике Армения, проведен анализ воздействия последних и других макроэкономических показателей корреляции. Для прогнозирования уровня занятости использовалась модель ARIMA – интегрированная модель авторегрессии (скользящего среднего). Были проведены сравнения между странами региона, а также другими развитыми и развивающимися странами. В статье представлены проблемы государственной политики занятости, а также кризисные явления, вызванные пандемией COVID-19, даны рекомендации по решению поднятых проблем.

В статье описаны тенденции развития рынка труда РА в среднесрочной перспективе, на основе полученных результатов представлены приоритеты РА в сфере занятости, предложены пути их реализации.

Ключевые слова: занятость, рынок труда, государственная политика, макроэкономические индикаторы.

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