

ECONOMIC GROWTH AND LABOR QUALITY IN ROMANIA IN THE LIGHT OF THE 2030 AGENDA - A COMPARATIVE INSIGHT WITH THE REPUBLIC OF MOLDOVA

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Abstract: This paper analyzes the relationship between economic growth and labor market dynamics in Romania, within the framework of Sustainable Development Goal 8 (SDG 8). The aim is to empirically assess how GDP evolution influences the main labor market indicators: employment rate, total and youth unemployment, real average wage and labor productivity. The analysis uses annual data for the period 1996-2025 and combines descriptive methods with linear regression. The results highlight a positive relationship between economic growth and labor productivity, as well as a moderate correlation with employment. However, GDP only partially explains labor market developments, which are also shaped by structural factors such as human capital and institutional rigidities. The persistence of youth unemployment and the gap between wages and productivity reveal the limits of translating economic growth into decent work. Economic growth is necessary, but not sufficient for achieving SDG 8.

Keywords: economic growth; GDP; labor market; employment; unemployment; labor productivity; sustainable development

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Introduction

The relationship between economic growth and labor market dynamics represents one of the central themes of contemporary public debate, both at European and national level. In recent years, discussions on economic performance have increasingly focused on the gap between GDP growth and the effective creation of sustainable jobs. Recent economic analyses, such as those published by Charles Schwab Corporation (2023), explicitly show that high GDP growth rates do not automatically lead to a proportional increase in employment, revealing a possible gap between output growth and job creation. This issue is extensively discussed in the political economy and institutional development literature as well. In *Why Nations Fail* (2012), Daron Acemoglu and James A. Robinson argue that long-term economic performance

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depends on the capacity of institutions to translate economic growth into inclusive prosperity. From this perspective, GDP growth by itself is not enough; what matters is its conversion into real employment opportunities and social mobility.

At the international level, the International Labour Organization underscores, in its report *Growth Strategies and Quality Employment Generation* (2013), that growth strategies must be evaluated by their capacity to generate productive employment and quality work. The concept of "decent work" thus becomes a central analytical criterion, integrating dimensions such as employment stability, wage levels and labor productivity. These orientations are reflected globally in the 2030 Agenda for Sustainable Development, adopted in 2015 by the United Nations, through Goal 8 "Decent Work and Economic Growth". The goal explicitly establishes the need to align sustained economic growth with full and productive employment, the reduction of unemployment and the improvement of working conditions.

At the European level, employment policies are developed and monitored by the European Commission through the "Employment, Social Affairs and Inclusion" framework, as well as through the European Pillar of Social Rights (2017). These strategies use indicators such as the employment rate, the unemployment rate (including youth unemployment), labor productivity and real income trends to assess labor market performance. At the same time, the *Future of Jobs Report 2025* published by the World Economic Forum (2025) highlights that technological transformations and the green transition will substantially modify the structure of employment, underscoring the need to adapt human capital and public policies accordingly.

In Romania, the debate on the relationship between GDP growth and employment is particularly relevant in the context of European economic convergence, external migration and the structural adjustments that followed both the financial crisis and the pandemic. National strategies on employment and sustainable development use indicators similar to their European counterparts to monitor labor market performance; however, the question of how far GDP dynamics explain the evolution of these indicators remains open.

Within this theoretical and strategic framework, this article tries to examine the correlation between GDP evolution and the following labor market indicators in Romania: the employment rate (ages 15-64), the total unemployment rate, the youth unemployment rate (ages 15-24), the real average wage and the labor productivity growth rate. These indicators are used in European and international employment and sustainable development strategies and constitute relevant variables for assessing labor market performance.

The aim of the paper is framed explicitly in empirical terms: testing the existence and intensity of the relationship between GDP dynamics and the above mentioned labor market indicators, over the period 1996-2025, using descriptive methods, correlation analysis and simple linear regression. The study does not assume a priori that GDP growth automatically leads to improvements in employment, but rather seeks to empirically verify this relationship in the case of Romania. Through this approach, the article contributes to the debate on the effectiveness of economic growth strategies in generating sustainable employment and

offers an applied analysis of the relationship between macroeconomic performance and labor market dynamics in Romania.

Literature Review

Sustainable Development Goal 8 of the 2030 Agenda focuses on the creation of decent jobs and sustainable economic growth, with particular attention to social inclusion and labor protection, according to UNDESA. This goal centers on GDP and its per capita growth, while ignoring unpaid work performed mainly by women. According to Rai et al. (2019), the importance on economic growth and productivity maintains gender inequalities, making it necessary for SDG 8 to be rethought in order to become truly inclusive and sustainable.

According to Burggraeve et al. (2015), the relationship between economic growth and employment remains stable across economic cycles, but productivity slowdowns have a direct effect on job quality. Maitah et al. (2015) analyzed GDP growth in certain EU member states, namely Germany and Austria, in relation to employment rate growth, observing a direct relationship and confirming the extension of Okun's Law. In the case of the Czech Republic, they noted a greater vulnerability of unemployment and a stagnating economy, caused by weak consumption growth and low GDP per capita.

Implementing the 2030 Agenda and the Sustainable Development Goals means reforming society based on the convergence of economic growth, social inclusion and environmental protection, thus ensuring the framework for sustainable and equitable development. In the view of Pârțachi et al. (2018), the success of this process depends on the quality of national statistical systems, which provide the relevant information that will form the basis of the public policies adopted, specific to each country.

Kreinin and Aigner (2022) argue that goals 8.4, 8.7 and 8.8 of the 2030 Agenda adequately address decent and sustainable work, while the SDGs as a whole place emphasis on economic growth and employment, which may undermine social foundations. Jianu et al. (2021) analyzed the implementation of SDG 8 at EU level and concluded that it contributes to reducing inequalities in the labor market and to stimulating convergence among member states, even though significant regional differences exist. The goal is a stable and equitable labor market by 2030, which requires increased attention to disadvantaged groups, young people and sectors capable of generating new jobs.

According to Wijaya et al. (2021), in the case of Romania, the labor force and human development indicators have a significant impact on economic growth, both through direct and indirect means. Policies that support and protect the population (such as those related to health, education and human development) can strengthen citizens' trust, amplifying their effects on the labor force and, implicitly, on economic performance.

Rantanen et al. (2020) argue that the Decent Work agenda has been successfully implemented in approximately two thirds of member states, supported by the UN's 2030 Agenda. Although significant variations exist between countries and adjustments are needed to more broadly cover all areas and special situations that may arise (such as

pandemics and global crises), the agenda remains an instrument through which decent work is promoted at the global level.

Ladaru et al. (2026) conducted a study concluding that per capita GDP growth does not automatically guarantee an increase in employment, a fact that can be explained by automation and sectoral restructuring. Thus, adherence to SDG 8 depends more on the quality of the labor force and labor market integration than on aggregate economic growth.

The study by Castro et al. (2020) highlights the importance of social economy organizations in reducing gender inequalities in the labor market, in this way contributing to the achievement of SDG 5, SDG 8 and SDG 10, by promoting decent work, gender equity and social inclusion. Filip (2015) analyzed the influence of GDP growth on economic development in 11 Central and Eastern European countries, concluding that their main focus should be on reducing unemployment, stimulating exports and foreign investment and improving the banking system.

Polster (2021) argues that improving institutional quality, the stability of economic policies and the adequate management of employment and demographic challenges lead to sustainable economic growth. Tumanoska (2020) analyzed the relationship between economic growth and both total and youth unemployment rates in two groups of countries, 7 South-Eastern European countries and 14 EU member states, using the Autoregressive Distributed Lag model on data from 1997 to 2017. In both panels, a decline in unemployment was linked to economic growth, with this effect being stronger in EU countries, while in the other panel, GDP changes influenced unemployment adjustment, explained by greater labor market flexibility. Adamowicz (2022) highlights the importance of adopting adequate public policies in the context of major crises, as government interventions can mitigate their negative effects.

Momete (2007) analyzed the relationship between economic growth and employment, concluding that in certain sectors there is even a personnel deficit. Policies oriented toward supporting human capital are necessary, through the creation of social protection programs and job creation schemes. Romania's economic growth has been influenced not only by internal factors - such as the legislative framework and adopted policies, but also by external factors, including the global financial crisis.

The study by Voda et al. (2019) highlights a relationship between GDP and investment that influences the labor force, while limiting job creation due to automation in certain sectors. The COVID-19 pandemic forced digital transformation and revealed the need for a flexible labor force; therefore, effective educational and social policies are urgently needed to turn digitalization into a genuine benefit for employees and, implicitly, for society, according to Piroșcă et al. (2021). As an example, the COVID-19 pandemic led to significant changes in the structure of the labor market in Poland, revealing the vulnerabilities of young people and self-employed workers.

Reducing discrimination in the labor market contributes to achieving SDG 8 through the inclusion of all social groups, increasing participation in the economy and labor force productivity. Social inclusion and equal opportunities are not simply social objectives, they

are factors that determine GDP growth by influencing a country's economic potential, according to Stanila et al. (2020). The COVID-19 pandemic further deepened existing labor market inequalities and significantly altered working dynamics, according to Agba et al. (2020). This crisis accelerated the adoption of practices such as remote work and flexible working hours, as well as the implementation of employee wellbeing programs.

Methodology

To assess the dynamics of economic growth and progress toward Sustainable Development Goal 8 (decent work and economic growth), two categories of indicators were used: macroeconomic growth indicators and labor market indicators. The category of economic growth indicators includes the annual real GDP growth rate, which reflects the size and dynamics of economic activity at national level. For the analysis of Romania's labor market, the following indicators were used: the employment rate for the population aged 15 to 64, the total unemployment rate, the youth unemployment rate (ages 15-24), the real average wage and the labor productivity growth rate per employed person, expressed as a percentage.

These indicators allow the assessment of labor market integration, the efficiency of labor force utilization and the level of remuneration adjusted for price developments. Taken together, the selected indicators provide an integrated perspective on the relationship between economic growth, labor market functioning and the population's standard of living, being relevant for monitoring progress toward Sustainable Development Goal 8.

The economic analysis for the period 1996-2025 was based in data collected and processed from the National Institute of Statistics of Romania. The following information were used: economic dynamics, labor market indicators represented by the employment rate for the 15-64 age group, total unemployment and youth unemployment, as well as indicators related to living standards and purchasing power, namely the net nominal wage. To eliminate the effect of inflation and express wages in comparable terms, the real average wage was determined by deflating the net nominal wage using the annual Consumer Price Index.

The research methodology adopts a mixed approach, combining descriptive and econometric methods. Descriptive analysis, realised by line chart graphical representations, was used to highlight the evolution over time of GDP and the main labor market indicators.

The methodology applied to the analysis of the Republic of Moldova is based on the use of chain-based indices as a tool for assessing the annual dynamics of economic indicators. These are calculated by dividing the value of an indicator in the current year by its corresponding value in the previous year, with the result expressed as a percentage. The analysis covers the real monthly average wage and GDP at real prices, both indicators expressed in euros, for the period 2002-2024. Applying this method allows for the identification of annual variations and trends of growth or decline, providing a relevant image of the economic evolution of the Republic of Moldova.

In the economic literature, the relationship between economic growth and labor market developments is frequently explained through Okun's Law, according to which variations in economic output are associated with changes in employment and the unemployment rate. Within this theoretical framework, the research aims to empirically test the relationship between GDP dynamics and the main labor market indicators.

Building on these theoretical considerations, the following research hypotheses were formulated:

- **H₁:** Real GDP growth is positively associated with the employment rate;
- **H₂:** Real GDP growth is positively associated with the real average wage;
- **H₃:** GDP only partially explains variations in the employment rate, unemployment and labor productivity, suggesting the influence of additional structural factors.

To assess the relationship between economic growth and labor productivity, a simple linear regression model was used. The regression analysis was carried out on the basis of the data presented in Table 1, which contains the macroeconomic and labor market indicators for the analyzed period. The simple linear regression model is defined by the following equation:

$$Y = \beta_0 + \beta_1 * X + \varepsilon \quad (1)$$

where:

- **Y** represents the real GDP growth rate;
- **X** represents the labor productivity growth rate.

To avoid the occurrence of spurious regressions, the variables were analyzed in terms of growth rates and the stationarity of the time series was verified using the Augmented Dickey-Fuller (ADF) test. The validity of the econometric model was evaluated through the analysis of residual properties. The normality of errors was verified using the Jarque-Bera test, the homoscedasticity of residuals was tested through the Breusch-Pagan-Godfrey test and the presence of first-order residual autocorrelation was checked using the Durbin-Watson test. All statistical analyses were carried out at a 5% significance level.

Although the analysis is based on a relatively short time series of 29 annual observations, it provides relevant insights into the relationship between economic growth and labor market developments in the Romanian economy, within the context of monitoring progress toward Sustainable Development Goal 8 of the 2030 Agenda.

Results and discussion

The analysis of macroeconomic and labor market indicators is shown in Table 1, which provides an overview of the evolution of the Romanian economy over two decades, highlighting the relationship between economic growth and labor force dynamics. The data are expressed both in nominal terms (RON) and as percentage indicators, in order to illustrate both the scale of economic phenomena and their rate of change.

The main categories of indicators analyzed are: economic dynamics, reflected through the evolution of the real GDP growth rate; labor market indicators, highlighted through the employment rate and the unemployment rate; and living standards, illustrated through the evolution of the real average wage. The analysis also includes labor productivity, a fundamental indicator for assessing economic efficiency. The relationship between labor productivity and the real average wage provides relevant information regarding the sustainability of economic growth and the evolution of living standards.

The analysis of GDP dynamics in Romania over three decades reveals a trajectory marked by cycles of expansion and contraction, reflecting both the structural transformations of the national economy and its vulnerability to external shocks. To more clearly highlight the dynamics of economic cycles, the evolution of the real GDP growth rate over the analyzed period is illustrated in Figure 1.

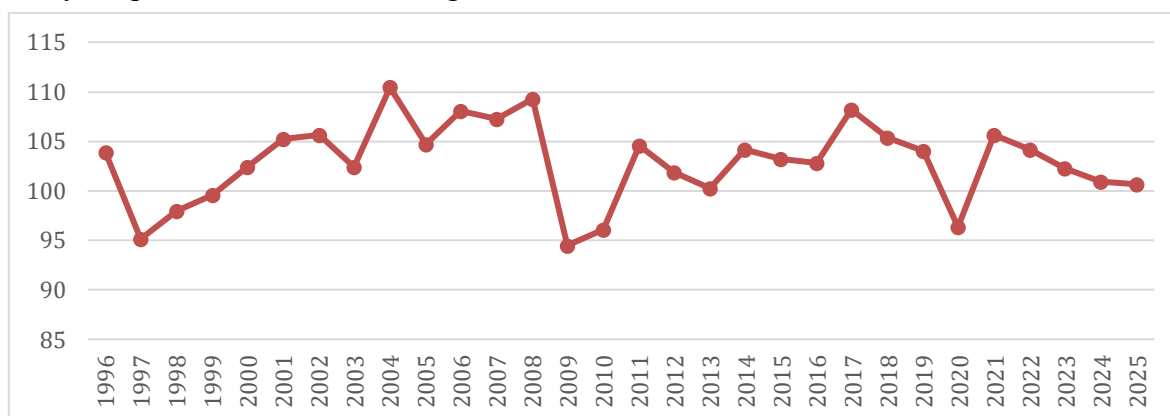


Figure 1. Evolution of the real GDP growth rate over the period 1996-2025

Source: compiled by the author based on data from the National Institute of Statistics

The period 1996-2000 begins with modest growth (+3.9% in 1996), followed by two consecutive contractions in 1997 (-4.8%) and 1998 (-2.0%), driven by macroeconomic instability, high inflation and the difficult transition to a market economy. The recovery of 2000-2001 marks the beginning of a cycle of sustained growth. The period 2001-2008 represents the longest phase of economic expansion in Romania's post-1989 history, with uninterrupted positive growth rates and a remarkable peak in 2004 (+10.4%), supported by domestic consumption, foreign direct investment and the EU accession process. This period consolidated the country's economic base, although it also generated structural imbalances.

The global financial crisis of 2009-2010 abruptly interrupted this cycle, with GDP contracting by -5.5% in 2009 and -3.9% in 2010 (the most severe recession of the analyzed period) reflecting the high degree of exposure of the Romanian economy to external shocks and the fragility of a growth model predominantly based on consumption. The period 2011-2019 marks a gradual recovery, with positive but more moderate growth rates, except for 2017 (+8.2%), when fiscal stimuli temporarily boosted domestic consumption. This period highlights uneven growth that remained dependent on cyclical factors.

The year 2020 brings a second major contraction (-3.6%), driven by the COVID-19 pandemic and its associated restrictions, followed by a swift recovery in 2021 (+5.6%),

supported by European funds and the rebound in domestic demand. The period 2022-2025 points to a progressive slowdown in growth, from +4.2% in 2022 to an estimated +0.7% in 2025, signaling a maturing of the economic cycle and a convergence toward lower growth rates, influenced by inflationary pressures, geopolitical uncertainties and the necessary fiscal consolidation.

The average for the analyzed period stands at approximately 3.2%, reflecting the real growth potential of the Romanian economy, yet with significant cyclical variations that underscore the need for long-term economic stabilization policies.

Within the analysis, three relationships were examined between GDP dynamics and the main labor market indicators. Figure 2 shows the evolution of the GDP growth rate, an indicator that reflects the dynamics of economic activity and displays a high degree of volatility.

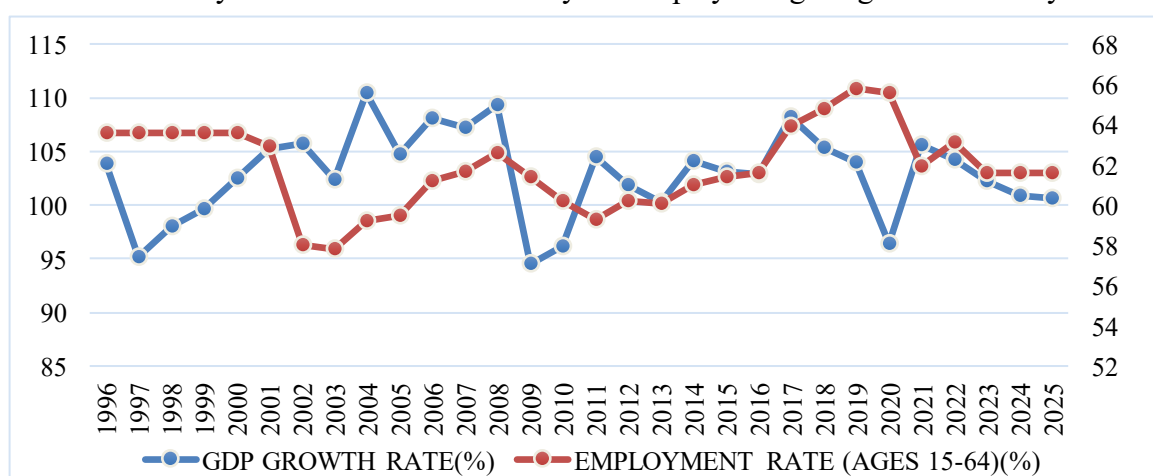


Figure 2. Evolution of the real GDP growth rate versus the employment rate in the period 1996-2025 (%)

Source: compiled by the author based on data from the National Institute of Statistics

The comparative analysis of the two indicators highlights a complex and not always synchronized relationship between economic growth and employment dynamics, illustrating the particularities of the Romanian labor market in the context of transition and European integration.

The period 1996-2002 stands out for a relatively high and stable employment rate (around 63.6%), maintained despite the economic contractions of 1997-1999. This phenomenon reflects the structural rigidity of the Romanian labor market during the transition period, where the restructuring of state-owned enterprises progressed slowly and large-scale layoffs occurred with a delay relative to the economic decline. The sharp drop in the employment rate in 2002 (from 62.9% to 58.0%) coincides with the acceleration of privatizations and industrial restructuring, not with an economic recession, which confirms the time lag between economic growth and labor market adjustments.

The period 2003-2008 sees a gradual recovery in the employment rate, from 57.8% to 62.6%, supported by significant economic growth, peaking at +10.4% in 2004. This period illustrates the positive workings of Okun's Law: sustained economic expansion generated

the gradual absorption of the available labor force, particularly in the construction, trade and services sectors, driven by EU accession in 2007.

The financial crisis of 2009-2010 produces a double effect: the GDP contraction of -5.5% and -3.9% is accompanied by a decline in the employment rate from 62.6% to 60.2%, confirming the negative correlation between recession and employment. However, the magnitude of the employment decline was smaller than that of GDP, suggesting that Romanian firms partly opted for reduced working hours and wage cuts rather than mass layoffs.

The period 2011-2019 shows the clearest positive correlation between the two indicators: the renewed economic growth, culminating in +8.2% in 2017, led to the highest employment rate recorded in the analyzed period, 65.8% in 2019. This evolution reflects the effects of fiscal stimuli, public sector wage increases and high labor demand from foreign investors.

The year 2020 produces a paradoxical disconnect: although GDP falls by -3.6%, the employment rate holds at 65.6%, virtually unchanged from 2019. This can be explained by state-subsidized short-time work schemes, which allowed employment relationships to be maintained despite the suspension of economic activity, an unprecedented countercyclical intervention in Romania's recent history.

The period 2021-2025 points to a convergence toward more moderate rates of both GDP growth and employment, stabilizing around 61-63%. The stagnation of the employment rate under conditions of positive economic growth suggests the emergence of structural constraints in the labor market, such as a shortage of skilled labor, emigration and demographic aging, factors that limit the economy's capacity to convert economic growth into additional employment.

The second relationship examined in the study concerns the link between the real average wage and the labor productivity growth rate, as shown in Figure 3.

The comparative analysis of the two indicators reveals a long-term divergent dynamic between the evolution of the real average wage and the labor productivity growth rate, with significant implications for the competitiveness of the Romanian economy.

The period 1996-2008 is characterized by accelerated growth in the real average wage, supported by positive productivity growth rates, with notable peaks in 2002 (+17.7%) and 2004 (+15.0%), periods that coincide with the acceleration of economic restructuring and the increase in foreign direct investment in Romania.

The financial crisis of 2009-2010 produced a visible correction, with the labor productivity growth rate recording negative values (-1.9% and -0.7% respectively), without however slowing the rise of the real average wage, suggesting a temporary decoupling between remuneration and economic performance. The period 2011-2019 marks a sustained rebound in both indicators, with the real average wage approaching the 3,000 RON level, while labor productivity recorded moderate but steady growth. The year 2020 represents a

major inflection point, with the real average wage registering a sharp decline because of the pandemic crisis, followed by a swift recovery in 2021-2023.

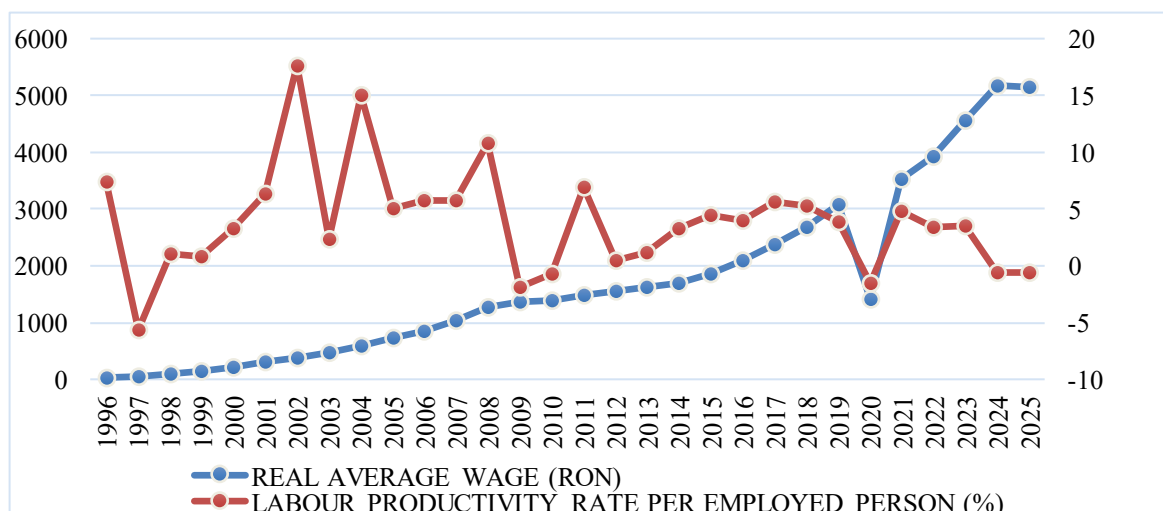


Figure 3. Evolution of the real average wage versus the labor productivity growth rate over the period 1996-2025

Source: compiled by the author based on data from the National Institute of Statistics

The period 2024-2025 raises macroeconomic concerns: the labor productivity growth rate turns negative (-0.65%), while the real average wage continues to rise, pointing to a widening gap between labor costs and labor efficiency, with potentially adverse effects on competitiveness and the sustainability of economic growth. Figure 4 illustrates the evolution of unemployment in relation to GDP dynamics and highlights the inverse relationship between the real GDP growth rate and total unemployment.

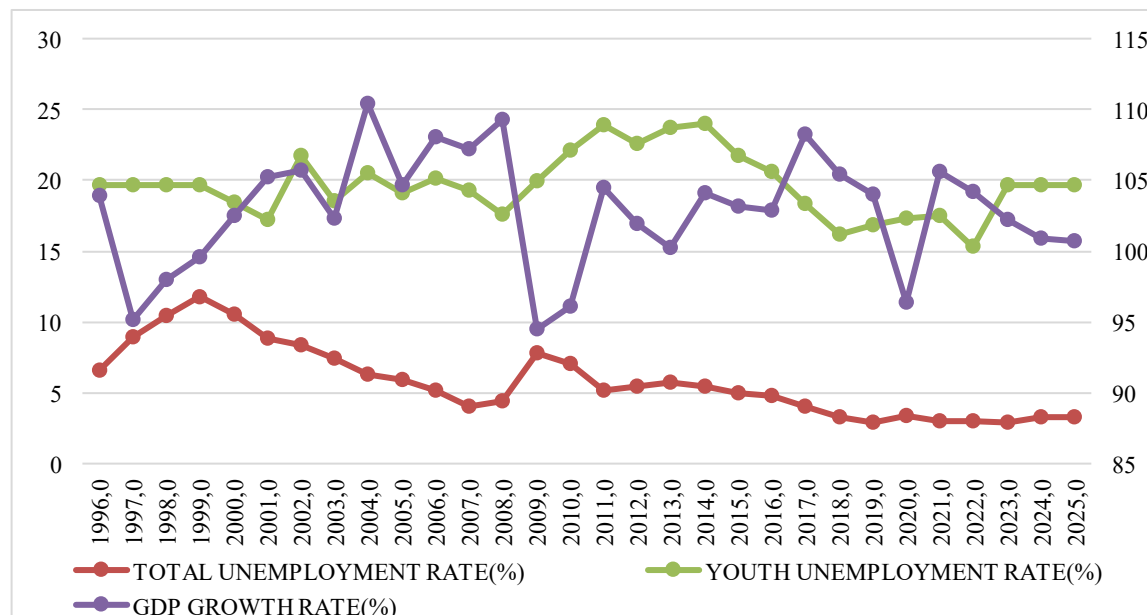


Figure 4. Evolution of total unemployment and youth unemployment versus the real GDP growth rate over the period 1996-2025

Source: compiled by the author based on data from the National Institute of Statistics

The relationship between the three indicators is visible across the entire period, partially confirming the logic of Okun's Law: periods of economic contraction, 1997-1999, 2009-2010 and 2020, coincide with increases in the total unemployment rate, while phases of sustained expansion from 2001-2008 and 2014-2019 are associated with its reduction, down to the historic low of 2.9% in 2019. Nevertheless, the magnitude of unemployment adjustment is systematically smaller than that of GDP, reflecting structural rigidities in the Romanian labor market and state interventions during periods of crisis.

Youth unemployment follows a distinct trajectory, less correlated with the economic cycle, remaining at a structurally high level with an average of approximately 19.7% over the entire analyzed period, compared to 5.8% for total unemployment. The most concerning aspect is the post-2009 crisis evolution: while GDP was recovering from 2011 onward and total unemployment was declining, the youth unemployment rate continued to rise, reaching an absolute peak of 24% in 2014.

The period 2017-2019 represents the only moment in the analyzed history where the convergence among all three indicators is complete and simultaneously favorable: high economic growth (+8.2% in 2017), total unemployment at its historic low and youth unemployment falling rapidly toward 16.2% in 2018. This exceptional conjuncture was driven by a combination of fiscal stimuli, public sector wage increases and high labor demand from investors, without, however, reflecting a structural resolution of the problem of youth labor market integration.

The year 2020 produces a shock across all three indicators: the real GDP growth rate drops by -3.6%, total unemployment rises slightly to 3.4% and youth unemployment climbs to 17.3%. The relatively limited magnitude of the unemployment increase relative to the scale of the economic contraction is explained by the state-subsidized short-time work schemes, which prevented mass layoffs but also preserved existing inefficiencies in the labor market.

The period 2021-2025 points to a stabilization of all three indicators at moderate levels: positive but slowing economic growth, total unemployment stabilized around 3.3% and youth unemployment reverting toward the historical average of approximately 19.7%. This convergence toward historical averages, in the context of diminished economic growth, suggests that the Romanian economy is entering a phase of cyclical maturity, in which the potential for reducing unemployment through economic growth is limited by structural demographic and skills constraints.

The results suggest that, although the real GDP growth rate has a positive effect on employment and on the evolution of the real wage, it does not fully account for the variations in the indicators associated with Sustainable Development Goal 8 "Decent Work and Economic Growth." The persistence of youth unemployment highlights the influence of additional structural factors, such as the education system, labor migration and the structural characteristics of the economy.

The results indicate that Romania has made significant progress in terms of economic growth, but its translation into decent work remains partially limited. GDP growth is a

necessary condition for achieving Goal 8 of the 2030 Agenda, but not a sufficient one in the absence of public policies oriented toward employment quality and labor market inclusion.

Continuing the analysis, the study turns its attention to the Republic of Moldova for the period 2002-2024. To more accurately capture developments over time, chain-based indices are used, which allow for the analysis of relative year-on-year variations. In this regard, two essential indicators are examined: the real monthly average wage and GDP at real prices, both expressed in euros. Chain-based indices are calculated as the ratio between the value of the indicator in the current year and its value in the previous year, multiplied by 100, which allows for the identification of the annual rate of growth or decline.

Through the use of this methodology, the analysis seeks to highlight the extent to which the evolution of real GDP is accompanied by changes in real wages in the Republic of Moldova, thus offering a perspective on the relationship between economic growth and living standards in the context of sustainable economic development objectives, revealed in Figure 5.

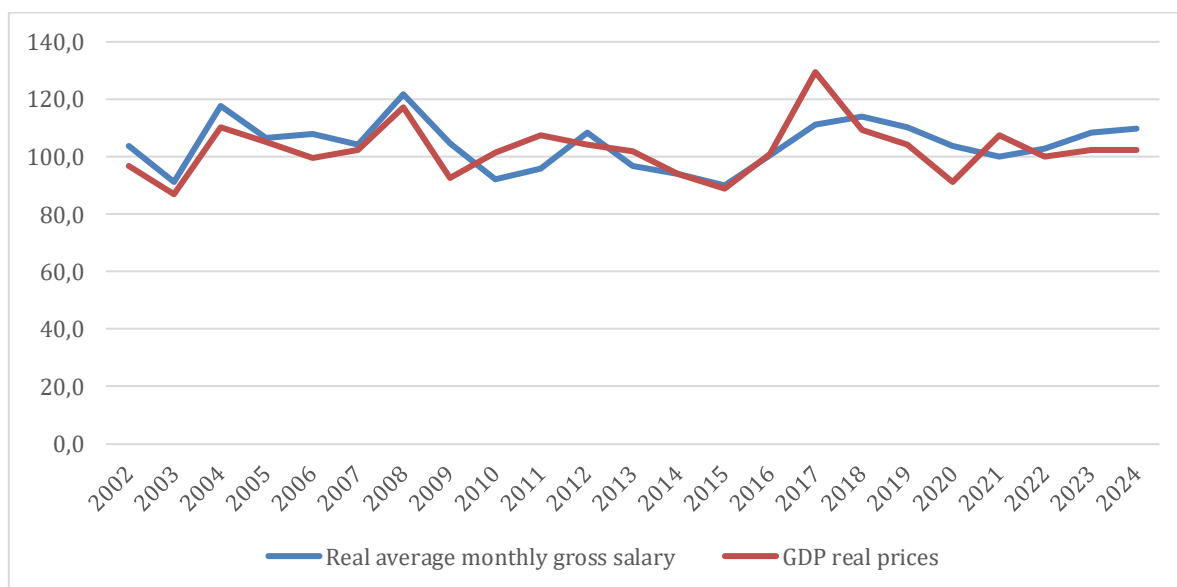


Figure 5. Evolution of real GDP and the real monthly average wage

Source: compiled by the author based on data from the National Institute of Statistics

In Figure 5, both indicators display significant year-on-year fluctuations, reflecting the sensitivity of the economy to internal and external factors. In most years, index values remain close to the 100 level, indicating an alternation between periods of growth and stagnation or slight decline.

Real GDP (represented by the red line) records more pronounced variations compared to the real wage. A notable peak is observed around 2017, when the index exceeds 120, suggesting accelerated economic growth. There are also periods of decline, around 2009 and 2020, which can be associated with economic crises or external shocks.

As for the real monthly average wage (the blue line), its evolution is relatively more stable, with more moderate variations. It generally follows the trend of GDP, indicating the

existence of a positive relationship between economic growth and wage dynamics. However, the correlation is not perfect, with periods in which wages grow more slowly or even stagnate despite GDP growth.

An important aspect highlighted by the chart is the existence of time lags between the evolution of the two indicators. In certain intervals, GDP growth is not immediately reflected in real wage growth, suggesting that the transmission of economic growth to the population's living standards is incomplete or delayed.

To deepen the analysis of the relationship between economic growth and labor market developments, the descriptive and correlational analysis is complemented by the application of a simple linear regression model. In this context, the econometric model used aims to estimate the effect of the productivity growth rate on the GDP growth rate. The choice of these variables is justified by the central role that economic growth plays in job creation and in improving labor market performance, in line with the objectives set out under Sustainable Development Goal 8.

A rigorous econometric analysis requires verifying the statistical properties of the data series used, particularly their stationarity. In this context, the Augmented Dickey-Fuller (ADF) test was applied to test for the presence of a unit root and, implicitly, the stationary character of the analyzed series.

Table 1. Stationarity of data series

Test type	ADF
Variables	Prob.
Real GDP growth	0.0037
Labor productivity growth rate	0.0004

Source: compiled by the author

The results of the Augmented Dickey-Fuller (ADF) stationarity test, presented in Table 1, indicate that both analyzed series are stationary at level. For the real GDP growth rate, the probability value associated with the ADF test is 0.0037, while for the labor productivity growth rate it is 0.0004, both values falling below the 5% significance level.

Within this context, to highlight the relationship between the analyzed variables, a linear regression model will be constructed in which the real GDP growth rate is treated as the dependent variable and the labor productivity growth rate serves as the explanatory variable.

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Table 2. Regression model results

Dependent Variable: Real GDP growth				
Method: Least Squares				
Sample: 1996 2025				
Included observations: 30				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Labor productivity growth rate	0.694982	0.093369	7.443418	0.0000
C	100.1866	0.570095	175.7366	0.0000
R-squared	0.664287	Mean dependent var		102.8999
Adjusted R-squared	0.652297	S.D. dependent var		4.071488
S.E. of regression	2.400808	Akaike info criterion		4.653829
Sum squared resid	161.3887	Schwarz criterion		4.747242
Log likelihood	-67.80743	Hannan-Quinn criter.		4.683712
F-statistic	55.40447	Durbin-Watson stat		1.800343
Prob(F-statistic)	0.000000			

Source: compiled by the author

The results of the linear regression model estimation, presented in Table 2, highlight the existence of a positive and statistically significant relationship between the labor productivity growth rate and the real GDP growth rate. The regression equation obtained is:

$$\text{Real GDP growth rate} = 100.1866 + 0.6949 \times \text{Labor productivity growth rate} \quad (2)$$

The coefficient associated with the explanatory variable (0.6949) indicates that a one-unit increase in the labor productivity growth rate leads, on average, to an increase of approximately 0.69 units in the real GDP growth rate, holding all other factors constant. The probability value (p-value = 0.0000) confirms that this coefficient is statistically significant.

Regarding the goodness of fit, the coefficient of determination $R^2 = 0.6643$ indicates that approximately 66.43% of the variation in the real GDP growth rate is explained by variations in the labor productivity growth rate. The adjusted value (Adjusted $R^2 = 0.6523$) confirms the robustness of the model.

The overall significance test (F-statistic = 55.40447, with p-value = 0.0000) shows that the model is valid, with the explanatory variable having a significant impact on the dependent variable. In addition, the Durbin-Watson statistic (DW = 1.8003) suggests the absence of significant error autocorrelation, indicating a well-specified model.

The validity of the econometric conclusions also depends on whether the fundamental assumptions of the classical linear regression model are met. In this regard, it is necessary to verify the properties of the residuals, as they must satisfy certain conditions for the estimates obtained to be efficient and unbiased.

Table 3. Results of tests applied to the residuals

Test	Probability
Jarque-Bera	0,1154
Harvey	0,8936
Breusch Godfrey	0,5392

Source: compiled by the author

The diagnostic test results presented in Table 3 confirm that the assumptions of the linear regression model are satisfied. The Jarque-Bera test yields a probability of 0.1154, suggesting that the residuals are normally distributed. The Harvey test indicates the absence of heteroscedasticity ($p = 0.8936$) and the Breusch-Godfrey test confirms the absence of error autocorrelation ($p = 0.5392$).

The results highlight the fundamental role of labor productivity as a driver of economic growth. The positive coefficient of the labor productivity growth rate confirms that improvements in the efficiency of labor utilization lead to an increase in total economic output. In practical terms, when the same amount of labor generates a larger volume of goods and services, this is directly reflected in real GDP growth.

This relationship can be explained by the fact that productivity gains are generally associated with technological progress, investment in human capital, innovation and improvements in the organization of production processes. Economies that manage to raise their productivity therefore tend to become more competitive, make more efficient use of available resources and sustain higher rates of economic growth.

At the theoretical level, the results are consistent with modern formulations of Okun's Law, which show that GDP dynamics influence unemployment and employment, but the intensity of this relationship varies depending on economic structure and labor market rigidities. For example, the comparative analysis carried out for European economies by Tumanoska (2020) highlights significant variations in the Okun coefficient depending on the national context, while Maza (2022) shows that at the regional level in Europe, the employment response to economic growth is heterogeneous. Within this framework, the moderate coefficient identified for Romania points to a relatively low elasticity of employment with respect to GDP, characteristic of economies undergoing structural convergence.

A relevant aspect highlighted by the descriptive analysis is the existence of a lag effect in employment relative to GDP dynamics. The lowest point in employment in 2011, two years after the 2009 economic contraction, confirms that labor market adjustments are slower than those of output. This phenomenon is also documented in studies conducted for developed economies, such as those coordinated by Rahman (2017), which show that negative shocks are gradually absorbed through mechanisms, such as working hours adjustment or hiring freezes.

At the same time, the analysis highlights an important particularity: in 2020, the decline in GDP was not followed by a proportional reduction in employment. This temporary decoupling between output and employment can be interpreted in the context of the support measures adopted during the pandemic. Similar findings regarding the attenuation of the

health crisis impact on the labor market are noted in recent research on labor market sustainability in the post-COVID context, such as the analysis by Țircă (2021), which underscores the role of public interventions in maintaining employment.

Regarding the qualitative dimension of work, the results show that the real average wage grew significantly, but its pace exceeded productivity growth in certain periods. This evolution can be interpreted from several perspectives. In economies undergoing convergence, accelerated wage growth is often sustained by integration into more developed markets, labor migration and the pressure of skills shortages. However, recent literature draws attention to the risk of macroeconomic imbalances when wage dynamics are not aligned with productivity gains.

The International Labour Organization (2022-2023) highlights that in emerging European economies, wage increases can be temporarily sustained by cyclical factors, but their long-term sustainability depends on productivity progress. Similarly, the analysis by the European Commission (2023) shows that in Central and Eastern European member states there have been episodes in which income growth exceeded productivity gains, generating pressures on external competitiveness and the structure of unit labor costs.

From a structural perspective, World Economic Forum (2025) underlines that future productivity will depend critically on investment in digital skills and emerging technologies. In the absence of human capital adaptation to the new demands of the market, wage increases risk becoming decoupled from their productive foundation, which may limit long-term growth potential.

In the case of Romania, therefore, the gap between real wage dynamics and productivity must be interpreted not only as a sign of income convergence, but also as an indicator of the need for additional investment in innovation, education and sectoral efficiency.

In the absence of policies oriented toward human capital development, the reduction of regional disparities and the stimulation of high-value-added sectors, the effects of economic growth on employment quality remain limited. Recent literature emphasizes that the distribution of growth benefits is deeply influenced by institutional structure and the capacity of the state to correct regional and social imbalances.

Acemoglu and Robinson (2012) argue that inclusive institutions are essential for transforming economic growth into broadly shared prosperity and that in their absence, the benefits of development may remain concentrated in certain sectors or regions. At the European level, the European Commission (2023) highlights the persistence of regional disparities in employment and productivity, particularly between metropolitan and peripheral regions.

Furthermore, the International Labour Organization (2023) shows that inequalities in access to education and digital skills directly influence individuals' capacity to benefit from the structural transformations of the economy. In economies with pronounced regional differences, GDP growth may be concentrated in high-value-added sectors located in developed urban centers, while less developed areas remain dependent on low-productivity activities and precarious employment.

The results thus support the hypothesis that GDP only partially explains progress toward "decent work and economic growth." Economic growth emerges as a necessary, but

not sufficient, condition for the full achievement of Goal 8 of the 2030 Agenda. In the absence of policies oriented toward human capital development, the reduction of regional disparities and the stimulation of high-value-added sectors, the effects of growth on employment quality remain limited.

From a theoretical perspective, the study confirms the relevance of macroeconomic models linking output dynamics to employment, but underscores the need to integrate structural variables: human capital, sectoral structure, active employment policies, into explanatory models. From a practical perspective, the results suggest that economic policies must move beyond the paradigm of quantitative GDP growth and include measures explicitly oriented toward job quality, the reduction of youth unemployment and the alignment of wages with productivity.

The main limitation of the study lies in the fact that the analysis is conducted at an aggregate level, without capturing the differences and effects that exist at the regional level, which may lead to the omission of territorial heterogeneity.

Future research could employ multivariate econometric models or comparative panel approaches across EU member states, to assess whether the elasticity of employment with respect to GDP differs significantly among economies in the region and which factors determine a more efficient conversion of economic growth into decent work.

Conclusions

The results highlight that GDP dynamics have a positive effect on employment and on the real average wage, confirming the existence of a functional link between economic expansion and labor market performance. However, the moderate intensity of the correlation and the linear regression results indicate that this relationship is not exhaustive, GDP only partially explains the variations in the indicators specific to decent work.

The long-term analysis shows that the Romanian economy has undergone a significant convergence process, reflected in the sustained growth of GDP and GDP per capita, as well as in the consistent rise of the real average wage. At the same time, the labor market has demonstrated a gradual capacity to adapt to external shocks, from the global financial crisis to the COVID-19 pandemic. At the same time, employment adjustments occurred with a certain time lag relative to output dynamics, confirming the existence of structural rigidities and indirect transmission mechanisms between the macroeconomic sphere and the employment sphere.

A key finding of the study is the incomplete nature of the transformation of economic growth into decent work. Although total unemployment recorded a significant downward trend, youth unemployment remained persistently high and volatile, pointing to structural vulnerabilities related to the transition from education to the labor market, skills matching and employment segmentation. Moreover, in certain intervals, the dynamics of real wages outpaced labor productivity growth, an aspect that raises questions about the long-term sustainability of economic convergence.

The overall conclusion of the research is therefore that Romania has made significant progress in the quantitative dimension of economic development, but the transformation of this growth into structural and sustainable benefits for the labor market remains partially limited. Strengthening the relationship between economic growth and decent work requires an integrated approach, one that combines macroeconomic stability with structural reforms and active labor market policies, aligned with the objectives of sustainable development.

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