Important theories and statistical studies on Romanian reality concerning the unemployment and labor. 

Literature review

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Abstract

If two years ago young people said that it is difficult to enter on the labor market, now the situation is worsened because of the difficult economic climate. The discussions on the lack of employment positions are becoming increasingly heard. The layoffs, the decrease in the number of vacancies, all of these have more serious repercussions on young people than on the adults. Thus, during the financial crisis, young people are the human resources who "suffer" most in contact with the labor market and hardly find a job in Romania. According to the National Agency for Employment, the number of registered unemployed persons less than 25 years in the first quarter of 2010 doubled compared to 2008, reaching 105,007.

The aim of the present article is to illustrate some studies of some economists, known or less known, about the various developments on the Romanian labor market, possibly the evolution of unemployment on certain criteria. The article also will provide insights into the statistical modeling of certain economic laws for the employment and unemployment in Romania, thus creating a picture of the situation on the Romanian's labor market reality.

Keywords: unemployment, labor market, Romania, statistical analysis.

JEL Classification: E24, J6, C1, P16.

1. Some generalities concerning the features of labor market

Integrating young people into the labor market in Romania is one of the most difficult and pressing problems of its functioning, which has a significant economic and social influence. The labor market approach can not be done without a detailed analysis of employment and unemployment, because these elements together form whole. Like market of the most "fragile" factor of production, labor market plays a key role in any society. The labor market is defined as a process is confronting the work demand and supply, where are
determined the wages and employment levels. The fair pay relationships depend on a reasoned classification of posts, on the periodic analysis of competitive pay levels, on the employee's assessment and the effective planning of wages (Cole, 2000).

The labor market has several features that distinguish it from other markets with which are constantly interacting:

- Multidimensional (knows demographic, bio-psychological dimensions- economic and educational-formative behavior and work habits);
- Is an imperfect market (marked by natural rigidities- age, home; acquired rigidities-professional and occupational, and rigidities of the adjustment mechanisms of demand and supply of labor);
- Is a negotiated and contractual market (wage levels, working conditions, the relationship between wage level and structure of labor costs, premiums, benefits, etc. are often decided after some collective negotiations between social partners);
- Is structured and segmented market (segmentation based on the power property - public, private or mixed sector, or vocational-educational segmentation, etc) (Pârâianu, 2003, 94-95).

The problem of labor and the labor market has been approached from several angles; one of them is represented by a correlation between changes in technology and the labor efficiency. Thus, technological progress causes a permanent mobility to the occupational structures and also significant changes in labor efficiency (Pavelescu, 1997, 133).

A major problem that mankind is facing is the unemployment. It affects in a special way, the developing countries, where it has large or very large weights; along with inflation, this phenomenon is considered a chronic and incurable "disease" of the modern economy.

2. Literature review from theoretical perspective. The unemployment

Unemployment is analyzed in the literature from several perspectives, with more kind of views expressed, often controversial; along the way have been offered numerous definitions of this concept, which, although characterized by diversity, yet they contain common elements. The word "unemployment" has its origins in the french "chômage", which derives from the latin "caumare. The Latin word comes from the greek "cauma" which refer to "high heat" which stoped any activity.

Samuleson defines the unemployment as "a plague of modern economies which prevent people to work.” Milton Friedman argues that unemployment is useful and justified as a "natural consequence of market mechanism”. Babeau Marin and others from Romanian literature consider unemployment "a concept that means the opposite situation of employment of labor resources, it represents the degree of vacancy of potentially active population who would like to work, but can not find a job”. The french professor Alain Cotta described unemployment as "the situation of the no working individual “, considering that only the involuntary unemployment must be taken into account in analyzing the country's economic situation”. A belgian professor, Fernard Baudhuin sees unemployment as “full or partial inactivity of a group or of an individual” (Ignat, 2004, 83).
Petre Condrea (2002) believes that the unemployed are often either people who are first on the labor market, recruited from the active population, the high school and university graduates who are seeking a job, or people in the population that have become unoccupied after layoffs, restructurings, bankruptcy of the company etc. The unemployment rate varies from one country to another, from one period to another, being closely related to the economic evolution. Employment and the efficient use of labor resources are directly related to the labor market. There are elements that can not be analyzed separately from other parts of the labor market, particularly from unemployment, because one component can not cover all the aspects, features and effects that the overall have on the work factor. There are many reasons that cause unemployment, at micro and macro level (Baldan, Neaşu, 2008). A main cause of unemployment is the insufficient demand for labor; unemployment is inevitable in a market economy, is the manifestation of endogenous processes and actions on the economy and society, being correlated with different types of economic, demographic and socio-cultural behaviors, skills of the workforce, productivity, technological progress, economic development or recession (Mocanu, 2010).

The typology of unemployment: classify it in: cyclical, structural, technological, intermittent, discontinuity, seasonal.

a. Cyclic unemployment: is related to the cyclical developments in the economic activity, being more pronounced in the period of recession.

b. Structural unemployment: is a result of productions' restructuring under the influence of technological progress, which involves social and professional restructurings.

c. Technological unemployment: is the consequence of replacing the old technology with newer technology, which determines the cessation of work for some people, requiring retraining.

d. Intermittent unemployment: is caused by the uncertainty of economic affairs, leading to the short-term employment.

e. Discontinuity unemployment: it occurs to the individuals who interrupt their work for objective reasons, such as family-parenting.

f. Seasonal unemployment: is a consequence of the seasonal activities.

The policies to combat the unemployment aimed encouraging the employees to turn to the expanding branches, to the domains for that exists demand on the labor market. Gheorghe Oprescu proposes a series of measures that may result in policies to combat the unemployment:

- Policies to reduce the labor supply: concerns the older employees, whose rate of activity in countries in transition, although decreasing, is higher than in developed countries;

- Services for unemployed: the services that the labor offices must ensure can not be neglected; for that, those must be improved and expanded. In Western Europe, for example, are 7 to 14 workers in such institutions to 10 000 people, while in Eastern Europe are 1-2 workers for the same number of people able to work;

- Training / retraining: when carrying out restructuring, the redundant workers not only lose their jobs, but there is no demand for what they can provide. Retraining is very
important, especially if there is the situation when the number of vacancies is equal to the number of unemployed and the unemployed qualifications would prevent them from becoming employed (Oprescu, 2001, 74).

A good employment policy should have in view not only the minimization of unemployment, but also should aim to reduce the precarious jobs in favor of stable jobs and well paid (Romanescu, 2007). Milton Friedman introduced for the first time the concept of "natural" unemployment rate, situation characterized through the lack of inflation; this rate is identified with the unemployment rate which, if exceeded, leads to inflation. It is therefore a concept of balance. Between inflation and unemployment there is a compensation relationship in the sense that a lower unemployment can be achieved by accepting a higher inflation or inflation may be reduced accepting more unemployment.

This inverse correlation is shown by Philips curve, as follows:

![Figure 1 Short-term Phillips curve](http://www.ectap.ro/articol.php?id=44&rid=2)

Where:
- RI - rate of inflation
- RS - rate of unemployment
- RNS - natural rate of unemployment

The compensation relationship shown in the graph is valid only for a short period is as follows:

\[ R_{I_t} = R_{I_{t-1}} + \alpha(R_{S_t} - R_{NS}) \]

Rit = the current inflation rate
RIT-1 = previous rate of inflation
RSt = current unemployment rate
So the current rate of inflation ($R_{It}$) depends on two factors:
- the inertial component, defined by the expected inflation, which can be replaced by the previous inflation $R_{It-1}$;
- the cyclical component, defined by the current unemployment deviation ($R_{St}$) rapported to the natural rate of unemployment ($R_{NS}$). 

A current perspective concerns the unemployment benefit system from Romania. According to Petre Condrea (2001), the unemployment benefit is a form of social protection granted since February 1991 and represents all actions taken to prevent, remove or mitigate the consequences of "social risk" on the living standards of the population.

The doctor in economics Cristache Ristea (2005) offers a range of useful information relate to the grounds of unemployment management, unemployment management's strategic direction, unemployed training, or presents a series of test and measuring indicators of labor market's efficiency. In close interrelationship with unemployment, labor demand is characterized by indicators such as: working population, rate of labor force participation-primary indicator, employment rate, employment by sectors, part-time workers, working hours etc.. As indicators of labor supply are mentioned: working resources, unemployment, inactivity rate, unemployed, unemployment rate etc.

The long-term unemployment in Romania has increased both, in absolute terms and relative terms in the recent years, leading to increase the expenditure in terms of unemployment benefits - to support allowance and the social assistance programs for the unemployed labor force (Earle, Pauna, 1998).

### 3. Case studies and analysis on labor and unemployment in Romania

Among the economists who have approached and discussed the practical issues of unemployment and labor market can be found Constanța Mihăescu și Harja Eugenia. The first made a forecast for 2020, on the evolution of employment and active population, based on the activity and employment rates, since 1990. As a result of the analysis, translated into conclusions, she notes the view that "younger generations that will fuel the active population in the coming years will be numerically lower, while the majority of the adult population will fall within the active elderly population (over 50). This will have resonance in the plane of social labor productivity, social insurances, work organization and promotion hierarchies, possibly creating unwanted and unmanageable social tensions" (Mihăescu, 2001, 239).

Regarding the statistical analysis carried out by Eugenia Harja (2005), it refers to a series of estimates, population projections from Bacău County, in the horizon years 2003 - 2015, the analysis being realized by categories: male and female. For projecting was used the components method, applied to the population of Bacau County, resulted from the 2002 year census. Also, the method was applied by categories of living environments. This method supposes to project the population in a certain period of time, taking into account components such as gender, age, area. Also known as analytical method of forecasting the population, it is based on the population number in the moment of projection, assigned to
the three components. The results of this method are recorded in a variety of tables annexed.

Dr. Marian Chivu has conducted an analysis of employment in the South-East Region of Romania. At the beginning of its analysis, the author notes the close correlation between the labor market and the decrease/increase of population, in other words, the labor market is influenced by the population's reduction, arguing that in recent years, the population of South-East Region has the lowest level (in 2005, there is a decrease of 3% of population of the region, compared with 2000).

In the period 2000-2005, the population was characterized by a steady decline, in a percentage of 2.19% in 2002 compared to 2001. The volume of work resources has been influenced by this demographic decline caused by lower birth rates and fertility; at the end of 2005 (the year for analysis) the active population in South-East Region was in number of 1246 thousand persons, respectively 12, 65% representing the active population. Employed recorded at the end of that year was 1147 thousand persons, representing 12.5% of the Romania's employed population. The evolution of employment in this region between 2000-2005 was affected by restructuring and economic transformation, coupled with the macroeconomic outcomes. So the occupation has evolved descendant, "encouraged by the collective redundancies, the low investment and slow progress, the economic legislation being unstable and incomplete (Chivu, 2007, 152).

The economist Marian Ionel provides very interesting information with reference to the evolution of unemployment in Romania after 1991. He conducted an analysis until the years 2004, inclusive, and made some remarks on the existence of three periods: one between the years 1991 to 1996, the period from 1997 to 1999 and the range from 2000 to 2004. Great importances have the years 1991-1992, when officially the unemployment is emerging in Romania. In 1991, the number of registered unemployed was 337,440 in value, the end of next year record 929,019 unemployed, 2.75 times more than the previous year. Among the factors behind that growth, the author notes the effect of liberalization, particularly in the second half of 1991, which had the effect of reducing the economic activity of firms (Ionel, 2007). The same author made a mathematical model of Okun's law on the specifics of Romania, using as a starting point the analysis of unemployment and GDP values for the years 1991 to 2003.

In 2007, Ciprian Turturean developed a statistical modeling study of Okun's law, based on inflation and unemployment rate registered in Romania during 1993-2004. The analysis consists of the development of two distinct models to explain the dependence of the rate of GDP growth and unemployment and vice versa.

Modeling results in the two directions of the relations established between the growth rate of GDP and rising unemployment rate and vice versa are two distinct models, which not suggest a reciprocal relationship between the two dependent variables. The annual growth rate of natural unemployment and the potential annual GDP growth for Romania in 1992-2004 could not be estimated, because the economic developments in Romania from this period showed strong fluctuations related to variations in the rate of inflation, which implies strong variations in the rate of unemployment and thus in the growth rate of GDP.
Based on the estimated coefficient of determination (R squared) of the study, the author concludes that the estimated dependence between the rate of GDP growth and the unemployment rate is better than the estimation of dependence between the growth rate of unemployment and rate of GDP growth.

Another recent study (Balan, 2010) characterizes the corresponding value of unemployment in April 2010 in Romania. The study was based on a number of variables, on counties- the total number of unemployed, the number of unemployed females, the total number of unemployed and unpaid, and the numbers of those from private sector, the unemployment rate and female unemployment rate. The analysis of the distribution of these variables was performed using two statistical methods: data classification methods (classification tree-Hierarchical Classification and Cluster analysis on averages- K-Means Cluster). Hierarchical classification in the study applies on numerical or non-numeric variables and is based on progressive group of the statistical units according to the distance between the cluster units. The second method, averages for the cluster, analysis only numerical variables and concerns grouping the statistical units in a number of clusters fixed a priori.

Was chosen to display the output of all combinations of each iteration, distances, with the option Agglomerate schedule; the distances or similarities between elements was showed using the option Proximity matrix, and the cluster membership in one or more iterations of the module with the option Cluster Membership from Statistics. Also was chosen the graphic type representation or cluster diagram- hierarchical tree in the Dendrogram format.

First were done homogeneous groups of Romania counties, by reference to the existing number of unemployed at the end of April 2010. The results of hierarchical classification are presented as a hierarchical tree. This chart can suggest if there are outliers in the database, and also the number of clusters. After the dendogram analysis, can be said that are formed five clusters, groups of counties based on the number of unemployed.

- Cluster 1: Alba, Bacau, Bihor, Brasov, Buzau, Cluj, Constanta, Dambovita, Hunedoara, Mures, Neamt, Suceava, Teleorman, Vaslui;
- Cluster 2: Arad, Bistrita, Botosani, Braila, Calarasi, Caras- Severin, Covasna, Gorj, Harghita, Ialomita, Maramures, Mehedinți, Olt, Salaj, Sălaj, Sibiu, Timiș, Vâlcea, Vrancea;
- Cluster 3: Arges, București, Galati, Iasi, Prahova;
- Cluster 4: Dolj;
- Cluster 5: Giurgiu, Ilfov, Tulcea.

The average number of unemployed is the highest in the county of Dolj (cluster 4), with a much higher value compared to other clusters. The fewer unemployed were registered in late April 2010 in the counties of Giurgiu, Ilfov and Tulcea (under 10,000 people).

The same counties were grouped again, but after several numeric variables simultaneously.

Has been applied the cluster analysis on averages.
Variables taken out simultaneously to characterize the five clusters are: total number of unemployed, the number of unpayed unemployed and the number of payed unemployed.

Other clusters are formed, but this time the Romanian counties are grouped by the above-mentioned variables.

New cluster structure is as follows:
- Cluster 1: Dolj;
- Cluster 2: Arges, Bucuresti, Prahova;
- Cluster 3: Alba, Bacau, Brasov, Buzau, Cluj, Constanta, Dambovita, Galati, Hunedoara, Iasi, Mures, Neamt, Suceava, Teleorma, Vaslui;
- Cluster 4: Bistrita, Braila, Botosani, Calarasi, Covasna, Giurgiu, Ialomita, Ilfov, Salaj, Satu-Mare, Tulcea, Vrancea;

Therefore, the cluster three, for example, recorded an average of 12,442 payed unemployed and an average of 9280 unpayed unemployed.

The results of the two methods used have highlighted a significant differences between the Dolj county and other counties in terms of the indicators considered.

4. Conclusions

Labour market and unemployment are matters of interest because it is an actual theme. Over time, those have aroused the interest of economists, who provided the theoretical basis which is currently used in the analysis realized on the labor market from Romania. On this, is noticed that in Romania, the issues and the evolutions registered on the labor market in recent years are not entirely favorable to labor, because in present, are more and more layoffs and cutting salaries, and the young people who want to find a job meet more and more difficulties in this regard.

The fact that the unemployment rate has fallen steadily since April was a new opportunity for authorities to speculate that Romania's situation is better on the labor market and that the unemployed began to find jobs. An important remark in that the job offer taken into account is the one reported by employers at the public employment services, so it is possible that their number to not coincide with the actual market supply of labor, thinking at the fact that not all employers are turning to state when they publish job ads. Even so, however, Romania is, in terms of the vacancies job offer reported to the number of unemployed, far behind other European countries.

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