

WOMEN UNEMPLOYMENT DRIVEN BY THE INFLATION

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ABSTRACT. Although the Government take some actions in gender equity, the women unemployment is a challenge that exists in the labor market. Implication of women in economic activities will have a positive impact on economic development at national level, and more financial resources will be injected into the economy. As result a growth of inflation of the country is expected for long term period. The paper presents a balance between women unemployment and inflation rate. If unemployment falls below a certain rate, inflation accelerates, so the sufficiently high rate of unemployment, which can avoid this, is called the rate of unemployment that does not accelerate inflation. In the last four decades, macroeconomic research has expanded the analysis, so today we are talking about the existence and estimation of NAIRU, an acronym for Non-Accelerating Inflation Rate of Unemployment, which reflects that level of unemployment corresponding to stable inflation. In the NAIRU model, the real wage negotiated increases with the level of employment, as increased employment means fewer jobseekers and more bargaining power for unions. Unemployment is what regulates the workforce. Any policy aims to declare both a low level of unemployment and moderate inflation. This, with the essential aim of creating high and sustainable economic growth. However, recent decades have shown us that the processes of inflation and unemployment are interfering in many areas and with increasingly unexpected effects.

KEYWORDS: *women unemployment, economic development, gender equity, labor market.*

Introduction

The objective of the paper is to analyze the role of women in economic development of the country, by more active implication in labor market.

The key stakeholder, the Ministry of Economy and Infrastructure (MEI) is responsible for macroeconomic monitoring, analysis and forecasting. The development of the socio-economic forecasts is possible with active involvement of other key institutions, including the National Bank of Moldova (NBM), the Ministry of Finance (MoF), the National Bureau of Statistics and all line ministries. The scope and framework for development of macroeconomic and socio-economic forecasts is largely determined by the need to provide input to the development of MTEF and the draft annual budget Laws for the next year (including the laws on annual state budget, annual budget for state social insurance, and annual budget for health insurance). Ministry of Finance is responsible for the development of aggregate fiscal forecasts for the MTEF, as well as the detailed budget projections for the state budget.

National Social Insurance Agency and National Health Insurance Agency are responsible for the social insurance budget and health insurance budget projections respectively.

Traditionally, it is considered that there is an opposite correlation between inflation and unemployment [1,2], namely anti-inflationary measures generate unemployment, while the growth of employment can generate an increase in demand –that is more elastic compared to the supply of goods - and therefore it is generated the inflation. In order to understand what

the natural unemployment rate means, we start from the premise of the existence of inflation in the economy, expressed by a certain rate and the achievement, at the same time, of two conditions that do not change the size of inflation: not to create a surplus of demand, and no shocks of supply.

Methodology

The study is done using of the country developed macroeconomic model as an Excel Worksheets. More advanced models are under examination to be used for future and more advanced evaluation. The key indicators included in the socio-economic model include:

- Gross domestic product (GDP)
- Consumer price index (CPI) (projected with the National Bank of Moldova, NBM)
- Exchange rate (with the NBM)
- Exports
- Imports
- Trade balance
- Industrial output (together with the Ministry of Agriculture and Food Industry and the ME)
- Agricultural output (together with the Ministry of Agriculture and Food Industry)
- Investments in fixed capital
- Average nominal wage
- Labor Remuneration Fund

The following procedures are used to develop the forecast:

- data updating
- equations re-estimation
- specifications amendments (the forecast or the political simulation)
- forecast development
- results analyzing into Excel file, prepare for the presentation of the forecasting results.

The Phillips Curve

The relationship between inflation and unemployment was discovered by the British economist of New Zealand origin, Alban William Phillips [6], who researched a series of phenomena and statistics covering the period 1861-1957, highlighted an inverse relationship between the inflation rate and the unemployment rate, following the example of Great Britain. This relationship is known as the Phillips curve [7].

It is observed that, when the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the reduction of unemployment. On the other side, when the inflation rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their activity. The conclusion is that, the fight against unemployment would require, to a certain extent, inflation; in return, combating the accentuation of the inflationary phenomenon would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices. The Phillips curve found its confirmation in the economic reality of the market until the years 1960-1969.

The Phillips curve, as defined in 1958 by William Phillips, is based on the following relationship between the growth rate of salary $g(W)$ and the level of employment $f(U)$:

$$gW = gWT - f(U)$$

By this formula, Phillips tells us through this equation that the salary tends to increase according to its trend (T dependence of the salary), and to decrease when the level of unemployment increases. At the suggestion of Abba Lerner (1940) who argued that salary wages are adjusting to inflation expectations, in the 1970s the model was adjusted by introducing this term into the equation:

$$gW = gWT - f(U) + \lambda * gP_{ex}.$$

In simpler words, the salary depends on its trend (gWT), the level of unemployment (U) and the expected inflation ($\lambda * gP_{ex}$). Latter it was reached the inverse relationship between the inflation rate and the unemployment rate through another "artificial mathematical construction" based on a Keynesian innovation - the "natural level of production":

$$Y = Y_n + a \times (P - P_e)$$

where: Y –current production (logarithmic values),

Y_n –natural value of production (that does not depend on the price),

P –current prices and, P_e are the expected prices.

In this model it is assumed that "a" is a constant that must always be positive.

Economic theory mention, for example that, after a period in which a state's economy has been in recession, the unemployment rate will be quite high, which means a surplus of labor supply. From the moment the economic situation improves, the aggregate demand for labor will increase, leading to a decrease in the unemployment rate, and implicitly, an increase in the employed population. At the beginning, there will be little pressure to increase wages, and after a while, wages will increase in line with increasing labor productivity. This will increase the fixed and variable costs of businesses, while being felt in the prices of goods and services purchased by the population, which in turn will increase. Therefore, a decrease in unemployment leads to a general increase in prices, so to inflation. However, there are also situations when the Phillips curve does not find its applicability in the macroeconomic reality, especially in the years 1970-1984, when inflation showed values much higher than the unemployment rate, this situation being called stagflation.

We can conclude that, there is no long-term sustainable relationship between inflation and unemployment, with the Phillips curve being verifiable only in the short term:

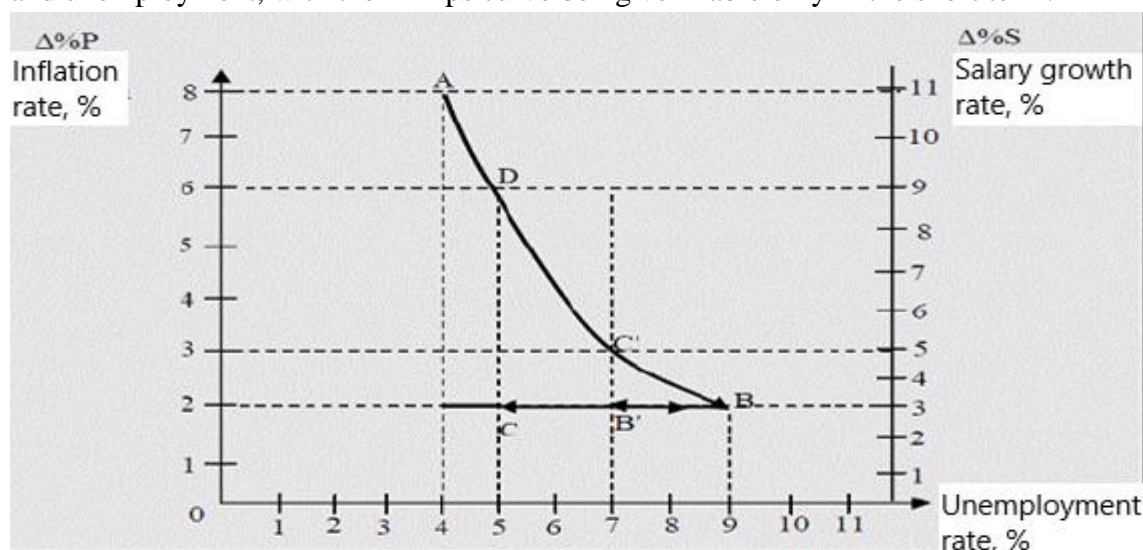


Figure2. Graphical example of the short-term Phillips Curve

Source: <http://academiadeinvestitii.ro/care-este-legatura-dintre-inflatie-si-somaj-2/>

According to the Figure 2 (above), economic decision makers, faced with alternative options, can choose between a low level of unemployment, satisfaction that must be paid with high inflation or vice versa.

The Figure above shows that in order to reduce the inflation rate by 6 percentage points (from A to B, from 8% to 2%), the sacrifice in the form of an increase in unemployment from 4% to 9% must be accepted, and the rate annual salary increase decreases from 11% /year to 3% /year. Conversely, in order to reduce, for example, the unemployment rate from 7% to 5% (B' → C), an increase in the annual inflation rate from 3% to 6% (C → D) must be accepted. For many years - practically throughout the period 1958-1975, the Philips curve (with the developments of R. Lipsey in 1960) helped to strengthen the Keynesian and Neo-Keynesian theories on the link between the state of the labor market and the inflation rate: to achieve some stability - a high percentage of unemployment must be accepted. At unemployment equal to its natural rate, the inflation rate is the lowest possible (theoretically zero).

Results

The result of assessment of impact of women implication in the labor market shows a positive GDP growth due to more financial resources injected into the economy. The econometric model, used for the development of the macroeconomic forecasting alternative scenario, was implemented in the context of medium term financing planning.

The econometric model forecasts the development of the principal variables from 4 economic sectors:

- Real sector (GDP by resource categories)
- External relations (balance of payments, financing of the external deficit, external debt)
- Budgetary sector (budget revenues and expenditures, their financing, internal debt)
- Banking sector (prices and monetary aggregates)

There are two types of linkages between the economic variables within the model, and both of them represent a system of equations making up the core of the model, and especially:

Identities, reflecting the reality without being confirmed by the estimation procedure. For example, the budget deficit requires financing, leading to one of the following consequences:

- Monetary policy liberalization (if the budget deficit is covered by credits granted by the NBM)
- Increase of external capital flows (if the deficit is covered by the external debt)
- Use of savings and less credit available to the economy.

Behavioral relations, as for example the permanent economic relations, which require to be confirmed by statistical recording, as follows:

- Free monetary policy, which was mentioned above, can lead to higher inflation;
- The external capital flows can determine the appreciation of the national currency, and consequently the increase of imports and the growth of the current account deficit;
- The reduction of credits to the economy will lead to the decrease in investments and consequently to the decrease in economic growth.

This paper shows that in the medium-term perspective the economic situation (within the model, as in the reality) depends on the economic policy of the authorities. Thus, the short list of factors determining the forecasted development level includes:

- Structural policies
- Tax policy quality
- Monetary policy strictness
- International markets attitude towards the Republic of Moldova (direct foreign investments, IMF programs, foreign transfers etc.)

Non-Accelerating Inflation Rate of Unemployment

If unemployment falls below a certain rate, inflation accelerates, so the sufficiently high rate of unemployment, which can avoid this, is called the rate of unemployment that does not accelerate inflation. In the last four decades, macroeconomic research has expanded the analysis, so today we are talking about the existence and estimation of NAIRU, an acronym for Non-Accelerating Inflation Rate of Unemployment, which reflects that level of unemployment corresponding to stable inflation. In the NAIRU model, the real wage negotiated increases with the level of employment, as increased employment means fewer jobseekers and more bargaining power for unions. Unemployment is what regulates the workforce. Any policy aims to declare both a low level of unemployment and moderate inflation. This, with the essential aim of creating high and sustainable economic growth. However, recent decades have shown us that the processes of inflation and unemployment are interfering in many areas and with increasingly unexpected effects.

Importance of the Phillips Curve for Moldova

The Phillips curve shows the optimal values of inflation for a certain unemployment rate to reach economic equilibrium. This helps central banks to establish the most effective monetary or fiscal policy: low inflation and a high employment rate.

When the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the attenuation of unemployment. Conversely, when the unemployment rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their economic activity. Hence the conclusion is, the fight against unemployment would require, to a certain extent, inflation; in turn, combating the accentuation of the inflation would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices.

Data for the Republic of Moldova of unemployment rate and inflation rate in the period 2008-2017 show the following evolution [8]:

Table1. The unemployment rate and inflation rate in Moldova, %

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
unemployment rate, %	7.4	6.7	5.6	5.1	3.9	4.9	4.2	4.1	3.0	3.0
unemployment rate for Men, %	9.1	7.7	6.8	6.0	4.6	6.2	5.5	4.8	3.5	3.5
unemployment rate for Women, %	5.7	6.6	4.3	4.1	3.1	3.6	2.9	3.3	2.5	2.5
inflation rate, %	7.36	7.61	4.66	4.64	5.10	9.67	6.48	6.57	3.05	4.84

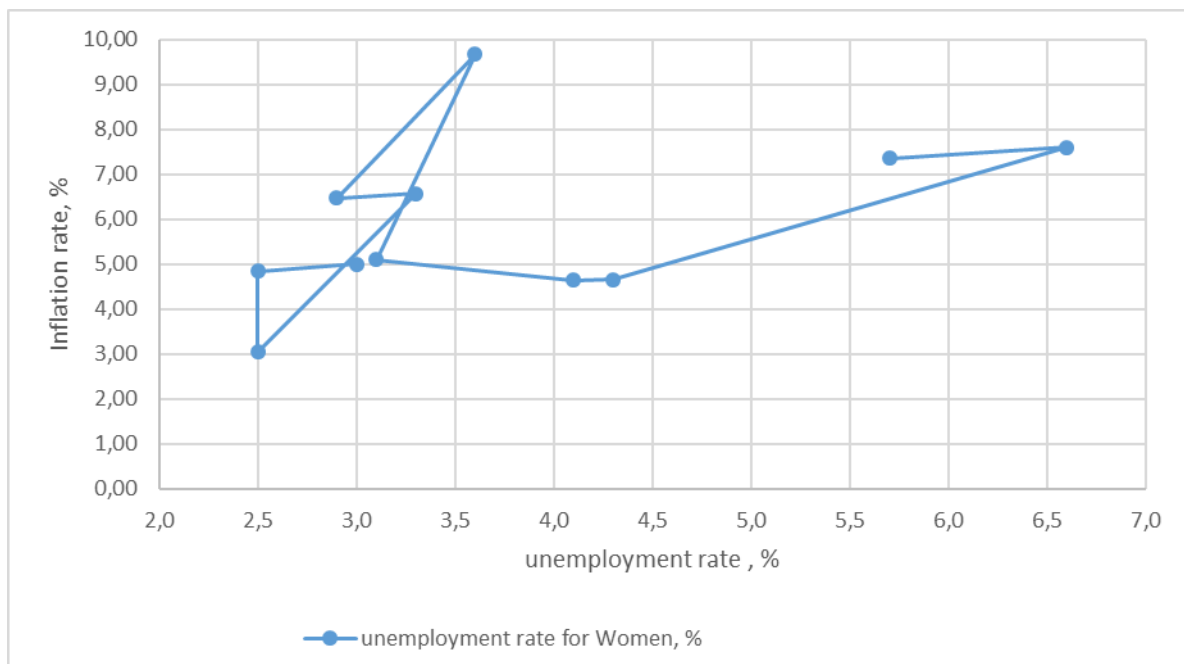


Figure3. The Phillips Curve for the Republic of Moldova, %

Source: developed by the author

The analyses of trends 2010-2020 shows that in order to reduce the inflation rate by 5 percentage points (from 9,6% to 4,6%), the sacrifice in the form of an increase in unemployment from 3,6% to 4,3% must be accepted, and the rate annual salary of women decreases from 12% /year to 9% /year.

The analysis of the Phillips curve showed that for the Republic of Moldova maintaining inflation at 4,6% ensures a minimum value of about 4,3% of women unemployment. If inflation falls from 9,6% to 4,6%, unemployment rises from 3,6% to 4,3%, if inflation rises from 4,6% to 7,6%, women unemployment rises from 4,3% to 6,6%. It is possible to obtain a minimum value of about 2,5 – 3 % of unemployment rate for women with an inflation rate of about 5% in conditions of existing trend of depopulation of Moldova. One of possible reason for decreasing unemployment might be the trend of depopulation of the country. The research is based on “What if” analyses and the general conclusion is that there are other factors that have impact on the women unemployment and more research is necessary to carry out with consideration of all driving factors. Figure 4 bellow shows the trend 2010-2020 of unemployment rate of women, and the forecast for 2020-2050.

The forecast for 2020-2050 will be analyzed in more details in the Figure 5 bellow. The objective is to observe the interconnection between inflation, unemployment and women’s salary growth rate. The result will offer us information on what is the impact between these indicators.

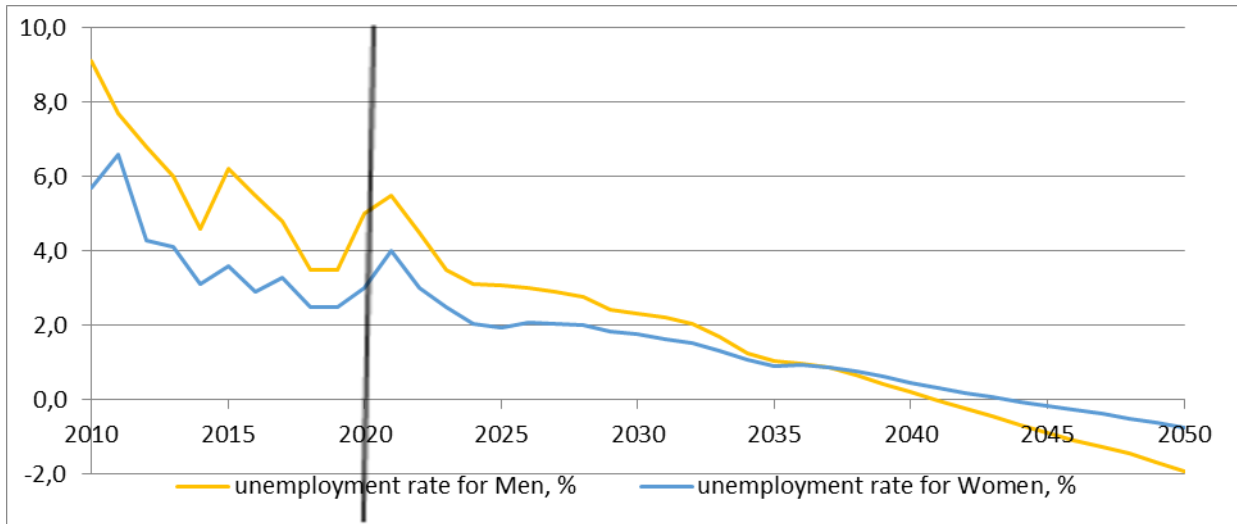


Figure 4. The trend of unemployment rate during 2010-2019, and forecast for 2020-2050, %

Source: developed by author based on data from NBS (National Bureau of Statistics)

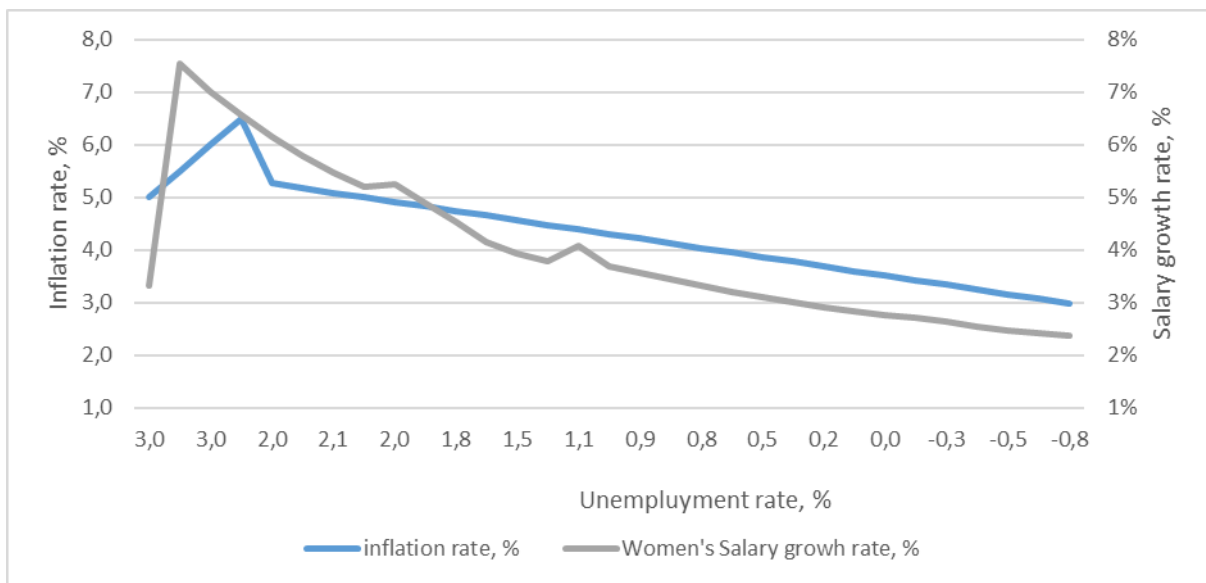


Figure 5. The forecast of inflation, unemployment and women’s salarygrowth rate during 2020-2050, %

Source: developed by author based on data from NBS (National Bureau of Statistics)

The Figure 5 above shows that in order to reduce the inflation rate by 3 percentage points by 2050 (from 6,5% to 3%), the sacrifice in the form of an increase in women unemployment from 2,5% to 4% must be accepted, and the rate of annual salary decrease from 7,5% /year to 2,5% /year. Conversely, in order to reduce, for example, the unemployment rate from 3% to 0%, a decrease in the annual inflation rate from 6,5% to 3% must be accepted.

Conclusions

The main findings of the research done on impact of women unemployment on the economic development of the country can be summarized as follows:

- When the inflation rate increases, the unemployment rate decreases, because the increase in prices stimulates the expansion of economic activity, the increase of employment and the reduction of unemployment. On the other side, when the inflation rate decreases, there is an increase in the unemployment rate, as economic agents are not interested in expanding their activity. The conclusion is that, the fight against unemployment would require, to a certain extent, inflation; in return, combating the accentuation of the inflationary phenomenon would imply, to a certain extent, unemployment, which attenuates the possibilities of buying and raising prices.
- There is no long-term sustainable relationship between inflation and unemployment, with the Phillips curve being verifiable only in the short term
- The Phillips curve shows the optimal values of inflation for a certain unemployment rate to reach economic equilibrium. This helps central banks to establish the most effective monetary or fiscal policy: low inflation and a high employment rate.
- For the Republic of Moldova maintaining inflation at 4,6% ensures a minimum value of about 4.3% of women unemployment. If inflation falls from 9,6% to 4,6%, women unemployment rises from 3.6% to 4,3%, if inflation rises from 4,6% to 7,6%, women unemployment rises from 4.3% to 6,6%.
- It is possible to obtain a minimum value of about 2,5 – 3 % of unemployment rate for women with an inflation rate of about 5% in conditions of existing trend of depopulation of Moldova. One of the reason for such an effect might be the depopulation trend of the country.
- In order to reduce the inflation rate by 3 percentage points by 2050 (from 6,5% to 3%), the sacrifice in the form of an increase in women unemployment from 2,5% to 4% must be accepted, and the rate of annual salary decrease from 7,5% /year to 2,5% /year. Conversely, in order to reduce, for example, the unemployment rate from 3% to 0%, a decrease in the annual inflation rate from 6,5% to 3% must be accepted.
- For the Republic of Moldova, the depopulation of the country is a serious issue and urgent actions are needed now in order to avoid challenges that will start by year 2040 created by deficit of labor on the market.

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