

# LABOR MARKET FLEXIBILITY: EMPIRICAL EVIDENCE ABOUT MACEDONIA

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The move to a market system for Macedonia was an expectation for high economic growth and increase welfare for its citizens. The impact of restructuring forced firms to output drop and to adjust the employment level. However, the labor market in Macedonia might be protected and underdeveloped. Such conditions of possible slow labor demand/supply adjustment in face of open economy and international trade and competition might endanger the long-term perspective of the economy. After the independence and restructuring of the economy in Macedonia started, the industry faced a negative shock and the Macedonian economy needed a better sector portfolio in its value added as a response to the lost markets, blockades, wars in the region etc. The inertia in the system couldn't make quick shift in the labor market in order to provide environment for a lower level of unemployment, new SME and the self-employment sector. The result was a high level of long-term unemployment with major fraction to the discouraged workers. The role of labor flexibility became very important as a solution to the problem of low level of employment and the high level of unemployment and the informal economy participation. Impediment to labor flexibility might be institutional through a high protection level.

One way to measure if Macedonian labor market is highly protected is through a labor demand model. In this paper the labor demand is estimated by using panel data. Thus, exogenous variables are wages and sector's value added. Sector's labor demand is measured in number of employees. Fifteen sectors were considered for the period 1997-2000 (more on the data see [1]). I will use pooled time series method on cross-section structure. As we said, the labor demand is assumed as a function of wage and value added (as proxy for output) in the sectors and the short run and the long run elasticity of labor demand in Macedonia are estimated as well.

## *Modeling the labor demand*

The general labor demand model is illustrated in the following equation:

$$empl = \beta_1 wage + \beta_2 wage_{t-1} + \beta_3 VA + \beta_4 VA_{t-1} + \beta_5 empl_{t-1} + \beta_6 time + \nu$$

Where,  $\nu$  - is iid  $N(0, \sigma^2_\nu)$  disturbance. VA – Value Added, empl – level of employment and wage. The following hypothesis of the extend and speed of sector's employment level will be investigated:

1. Significant employment adjustment ( $\beta_2 = \beta_4 = 0$ ). Employment in this period does not depend on the previous period's wage and output. However, it depends on the

previous period employment level. This would mean medium level of employment protection.

2. Rapid adjustment within one year ( $\beta_2 = \beta_4 = \beta_5 = 0$ ). The employment level adjusts within one year of a given change in the assumed exogenous variables. This would mean low level of employment protection.
3. Gradual employment adjustment over time (all parameters in the general model are significant). The response to the assumed shocks to the exogenous variables extends over one year period. This would mean high level of employment protection and strong institutional rigidities.

### Estimation results

The results from the estimations are presented in the following table.

Table 1. Estimation results.

Pooled OLS estimation. Data period 1997-2000.			
	Model 1. Significant employment adjustment ( $\beta_2 = \beta_4 = 0$ )	Model 2. Rapid adjustment within one year ( $\beta_2 = \beta_4 = \beta_5 = 0$ )	Model 3. Gradual employment adjustment
$\beta_0$ -constant	9.711 (7.274)	12.946 (10.139)	-0.209 (-0.439)
$\beta_1$ -wage	-0.684 (-6.718)	-0.862 (-8.297)	-0.961 (-38.601)
$\beta_2$ -wage; (t-1)	-	-	0.985 (26.880)
$\beta_3$ -value added	0.485 (6.233)	0.852 (25.124)	-0.099 (-1.570)
$\beta_4$ -value added; (t-1)	-	-	0.125 (1.836)
$\beta_5$ -employment; (t-1)	0.437 (5.063)	-	0.978 (33.952)
$\beta_6$ -time	-0.021 (-0.121)	0.026 (0.268)	-0.036 (-0.916)
$R^2$	0.952	0.923	0.998
SSR	4.039	8.323	0.192
DW	1.635	0.261	2.584

Note: t-statistics in the parentheses.

The time effects ( $\beta_6$ ) are insignificant in all of the models. The gradual employment adjustment model 3 has the insignificant constant variable ( $\beta_0$ ) and output variable both current ( $\beta_3$ ) and the lagged ( $\beta_4$ ) period. Thus, in Macedonia the responses to shocks to exogenous variables are not so gradual. However, it can be seen that the other two models have both all the variables significant (except for the time parameter -  $\beta_6$ ). I will test model 1 and model 2 with the F-test in order to find the significance of the  $\beta_5$  parameter. The F-test on the linear restriction in the model 1 rejected the null of a valid

$\beta_5 = 0$  restriction. Thus, the significant employment adjustment model was accepted for the case of Macedonia. Namely, sectors are responding relatively fast on the exogenous wage and output shocks, but gradually adjust employment depending on the last period's employment level.

Economic theory tells us about the labor demand function that there is positive correlation between the employment level and the output and negative correlation between the employment level and the wages. Our preferred model 1 is consistent with the economic theory and now I will calculate the short and long run elasticities of labor demand as are presented in the next table (calculated from the significant employment adjustment model 1 parameters in the table above).

*Employment elasticity in short and long run*

Table 2. Short and long run elasticity.

Model 1 Significant employment adjustment	Employment/Value Added	Employment/wage
Short run elasticity	0.485	-0.684
Long run elasticity <sup>1</sup>	0.861	-1.215

The numbers in the table 1 shows us that about 56.3 % (calculated as  $1 - \beta_5$ ) of any difference between the actual and the equilibrium demand for labor force are eliminated within a year. The short-term elasticity is measuring the contemporaneous percentage effect on employment of a 1 % increase in value added and wages in a given year. Thus, one percent increase in value added will result in 0.485 % increase in employment in short run and one percent increase in the wages will result in 0.684 percentage decrease in employment level. Long-term elasticity is measuring the percentage effect on employment over time of a 1 % percent increase in the value added and wages in the given year.

The insignificant gradual employment adjustment over time rejects the hypothesis of strong employment protection legislation in Macedonia and the accepted significant employment adjustment model shows relatively flexible labor market in Macedonia. Additional analyzes is required because in this research only parts of the GDP sectors are covered and maybe the OECD's employment protection legislation index could tell us more and thus, should be estimated for Macedonia as well. The empirical evidence for the CEE countries shows that they fall in the middle of the EU based flexibility index. And more, if labor flexibility really matters so much than the more labor flexible country is, the better the economic performance should be for it. But empirical evidence shows that the labor market flexibility is not the dominant force for good economic performance. It is a fact also that the CEE countries spend much smaller share of GDP on passive labor market policies compare to the OECD and the EU (see [3]). All on all, the unemployment benefits might have only modest effect on the labor market efficiency.

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<sup>1</sup> The long run employment/value added elasticity is calculated as:  $(\beta_3 + \beta_4)/(1 - \beta_5)$ . The long run employment/wage elasticity is calculated as:  $(\beta_1 + \beta_2)/(1 - \beta_5)$ .

Beside the clear need for more investment and strong economic growth, a possible mismatch might be a reason for the high unemployment in Macedonia. Another reason for the high unemployment and low participation in the labor force might be the shifting labor force toward human capital production (toward the educational centers) in order to meet the appropriate demand for new qualifications (see [4]).

### *Recommendations*

Recommendation for the international financial institutions is that they should take with a reserve the perception about the Macedonian labor force legislation as a rigid one and only with a comprehensive analysis, depending on the purpose, evaluations should be given (at least for analysis involving no longer than one year period and especially about social benefit transfers for employees that will lose their job).

Recommendation for the Government is to invite as soon as possible an expert that will build the employment protection legislation index. From the estimated model above we can find mechanisms that are consistent with economic theory and with other country's empirical evidence (see [2]). That will mean that in Macedonia healthy market mechanisms would decrease unemployment and would increase employment without administrative interventions. The fraction of the budget for (un)employed persons should be decreased taking into account fiscal discipline, but a cost-benefit set up might give more insight and clear answer from a motivation to participate and social protection perspective. Recommendation for the Statistical Office is to make consolidation in sampling quarterly data on major economic indicators (it would be interesting to build the same model with a quarterly data and to see the reaction time and the elasticities in a shorter than an one year period). This same analysis should be made on micro level with a sample of companies across sectors. Recommendation to the companies is to state clearly their need for quality and qualifications from the labor force they demand and not to regret to pay high salaries to qualified workers. Recommendation to the "state owned educational institutions" is to adjust as soon as possible toward the new labor force demand determinants, since they are already late taking into consideration the supply of services from many worldwide educational centers in the printed media's announcements and the possible competition they will face. A conclusion might be that the problem of unemployment might be attacked, beside the rudimentary – higher economic growth need, with enhancing labor force institutions, better matching process, improving the matching of qualifications with the demand, reconstruction of the educational process, enhancing active labor force measures and comprehensive analysis about each measure.

### Literature:

- [1] Marjan Nikolov - "Transitional highlights on the labor market in Macedonia", 2002.
- [2] Polona Domadenik and Maja Vehovec - "Defensive restructuring of firms in transition economies: the case of Croatia and Slovenia", 2002
- [3] Jan Svejnar – "Labor market flexibility in Central and East Europe", 2002.
- [4] Marjan Nikolov – "Is the workforce in Macedonia moving towards human capital production?", 2003.
- [5] Statistical office publications.

In Macedonia, the GDP production sectors are responding relatively fast on the exogenous wage and output shocks, but gradually adjust employment depending on the last period's employment level.

In Macedonia, one percent increase in value added will result in 0.485 % increase in employment in short run and one percent increase in the wages will result in 0.684 percentage decrease in employment level.

The insignificant gradual employment adjustment over time rejects the hypothesis of strong employment protection legislation in Macedonia and the accepted significant employment adjustment model shows relatively flexible labor market in Macedonia.

The empirical evidence for the CEE countries shows that they fall in the middle of the EU based flexibility index. And more, if labor flexibility really matters so much than the more labor flexible country is, the better the economic performance should be for it. But empirical evidence shows that the labor market flexibility is not the dominant force for good economic performance. It is a fact also that the CEE countries spend much smaller share of GDP on passive labor market policies compare to the OECD and the EU.