The perspectives of Macedonian labour market in the period of post-recessional development

Dimitar Nikoloski
ndimitar@yahoo.com
Faculty of economics-Prilep
Marksova bb, 7500 Prilep
Republic of Macedonia

Abstract

The aim of this paper is to assess the functioning of the Macedonian labour market and its perspectives in the period of post-recessional development. During the two decades long period of transition Macedonian labour market has been characterised with depressed conditions manifested by high and persistent unemployment rate, strong labour market segmentation and prevalence of long-term unemployment. Alongside the other spheres of the economy, recent recession has also affected the labour market performance. However, we find that disadvantaged segments such as youth, less educated and those employed in low productivity sectors have been concerned more than the rest of the labour force. The responsiveness of the labour market performance to macroeconomic fluctuation shows different patterns between period of economic growth and recession. According to our estimation, the negative macroeconomic shock has not been fully transferred in the domain of the labour market due to the role of the alternative labour market adjustment mechanisms such as employment in the informal sector, emigration and inactivity. Consequently we present appropriate policy measures which purpose is to improve the Macedonian labour market conditions.

Key words: Labour market, recession, business cycle, adjustment mechanisms

Introduction

The process of transition represents an interesting laboratory characterised by tremendous variations in key variables which has had profound consequences for economic, political and social life. During the two decades long period of transition according to the identified employment trends Macedonian labour market has been characterised with depressed labour market conditions. The initial 'transitional unemployment' differed in several aspects from other types of unemployment in that it was characterised by pronounced labour market segmentation, long average duration of unemployment and a low probability of exiting unemployment into employment (Nikoloski, 2004).

The impact of the prolonged transitional recession on the labour market has been manifested in a high and persistent unemployment rate. According to the composition of

the unemployed population by various socio-economic characteristics (education, age, gender, occupation, duration of unemployment etc.) the empirical analysis reveals striking labour market segmentation. With respect to this, some segments of the labour force such as youths, less educated workers and some ethnic minority groups face a much higher probability of becoming and/or remaining unemployed than the rest of the labour force. Moreover, the incidence of long-term unemployment in Macedonia is extremely high compared to other transition countries, indicating a likelihood of increasing human capital depreciation. The flow approach to labour market analysis reveals that the depressed conditions in the Macedonian labour market emerge from the low probability of transferring into employment due to insufficient job creation in the formal sector (Nikoloski, 2009).

In these circumstances alongside the traditional forms of adjustment in Macedonia have emerged additional mechanisms such as employment in the informal sector, inactivity and emigration. The investigation of the level of association between the unemployment and these other labour market adjustment mechanisms is of particular importance since it enables to identify their capacity to absorb part of the unemployed workforce. Hence, there exists possible overlap between the alternative labour market adjustment mechanisms, expressing their interactions in cushioning the economic and social consequences of persistent unemployment.

The aim of this paper is to explore the impact of the recent economic recession on the labour market performance in Macedonia and to assess the future perspectives in the period of post-recessional development. In this context, we start the paper with revising the major experience from the impact of recession on the worldwide labour market conditions. We continue with the analysis of the recent labour market performance in Macedonia by breaking down the unemployment rate for different labour market segments. The purpose of this analysis is to identify the most vulnerable groups that need to be targeted by the policy measures. In addition, we explore the responsiveness of the unemployment rate to changes in the GDP growth rate by taking into account the structural break due to the impact of recession. In other words, we test the hypothesis that recession might have an impact on the Macedonian depressed labour market condition. Finally, we argue that this recent episode may be used as an indicator of the main labour market weaknesses that would further enable the identification of the Macedonian labour market perspectives in the period of post-recessional development.

The worldwide experience

Most of the analyses of the impact of current recession on the labour market performance in developed countries has been performed in comparison with the previous recessions. In this context, the increase of unemployment rates is expected since the downturns in the real economy subsequently affected the labour market performance. The current recession on the world wide scene started in United States by the end of 2007 and rapidly spell over the rest of the world economy (Knotek and Terry, 2009). Because of the unprecedented collapse in world economic activity that has resulted in the worst global recession since World War II, sometimes authors refer to the recent downturn as ‘Great Recession’ (Arpaia and Curci, 2010, Verick and Islam, 2010).

According to Verick and Islam (2010), there are four fundamental factors that caused the start of the crisis. First, loose monetary policy that has been substantiated in low interest rates have fuelled a debt-financed consumption. Second, recession was partly due to global imbalances consisting of juxtaposition of excessive savings by surplus countries and excessive consumption by deficit countries. Third, the search for higher yields turned to riskier segments of the market thus deteriorating the lending standards and perceptions of risks. Finally, the lax financial regulation also contributed to the burst of the crisis.

Although United States were epicentre of the crisis, its economic consequences were unevenly distributed across different countries. The greater part of developed world including European Union and Japan have entered the crisis through financial and trade channels. However, some of the leading developing countries such as China and India have avoided major contraction despite their integration with the global economy.

There are three main channels for adjustment in labour demand at the firm level: working time (hours worked), number of workers, and wages/non-wage benefits. The reduction of the working hours is the most popular among high-skilled professionals due to the larger possession of firm-specific human capital, whereas the layoffs of redundant workers was mostly the case for unskilled workers and those with temporary contracts. The evidence from the OECD countries shows that nominal hourly earnings have not fallen in most countries thus, demonstrating downward wage rigidity. Moreover, real wages have in many cases risen because of either a fall in prices or slowdown in inflation.

The experiences from developed countries show that some segments of the labour force have been hit harder by the labour market contraction due to the economic downturn. First, employment contracted more for men than women because sectors that predominantly employ men such as construction, manufacturing and transportation were badly affected by the global downturn. Second, young people have experienced the largest decline in employment rates compared with other age groups. Third, unskilled have faced higher probability of being fired compared with skilled workers. Fourth, workers on temporary contract were more vulnerable to losing their jobs. Finally, the percentage point increase of unemployment has been higher for migrant workers and some disadvantaged ethnic groups.

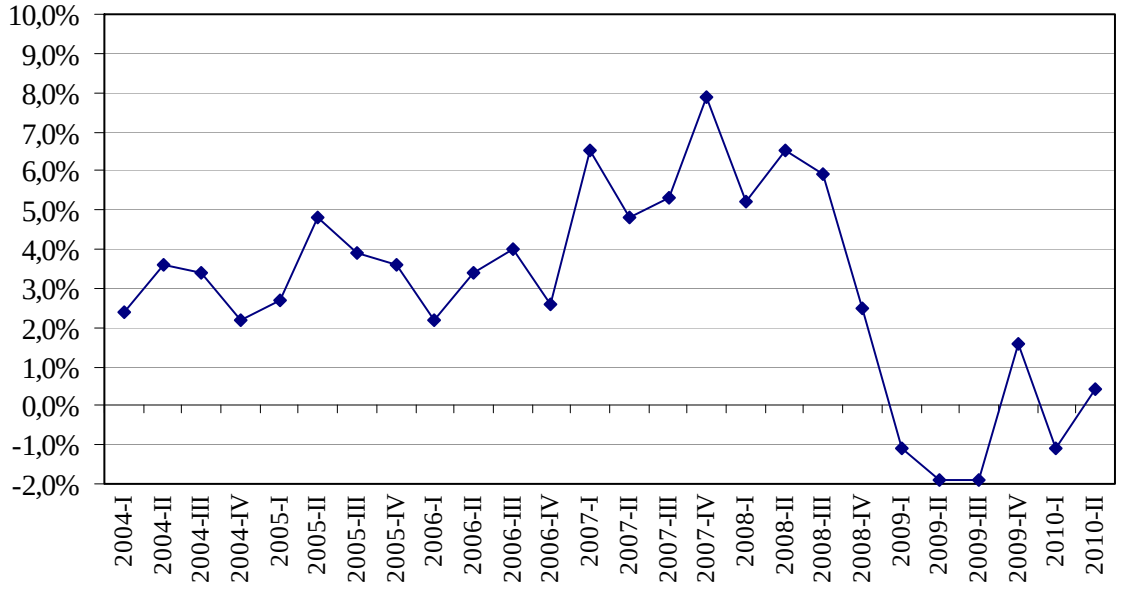
In the major part of developed countries the recovery has been characterised with moderate increase in job creation, which has been termed as “jobless recovery”. The past experience from the European hysteresis problem shows that external shocks might have long-lasting effects on the unemployment rate. Hence, in the aftermath of recession there is an urgent need for government policies that would spur the economic development by creating increasing number of new jobs in the most competitive industries.

The case of Macedonia

Macedonia and the region of South-East European countries has not remained apart from the negative global macroeconomic tendencies. Although recession has started one year later, after three consecutive quarters of negative GDP growth the

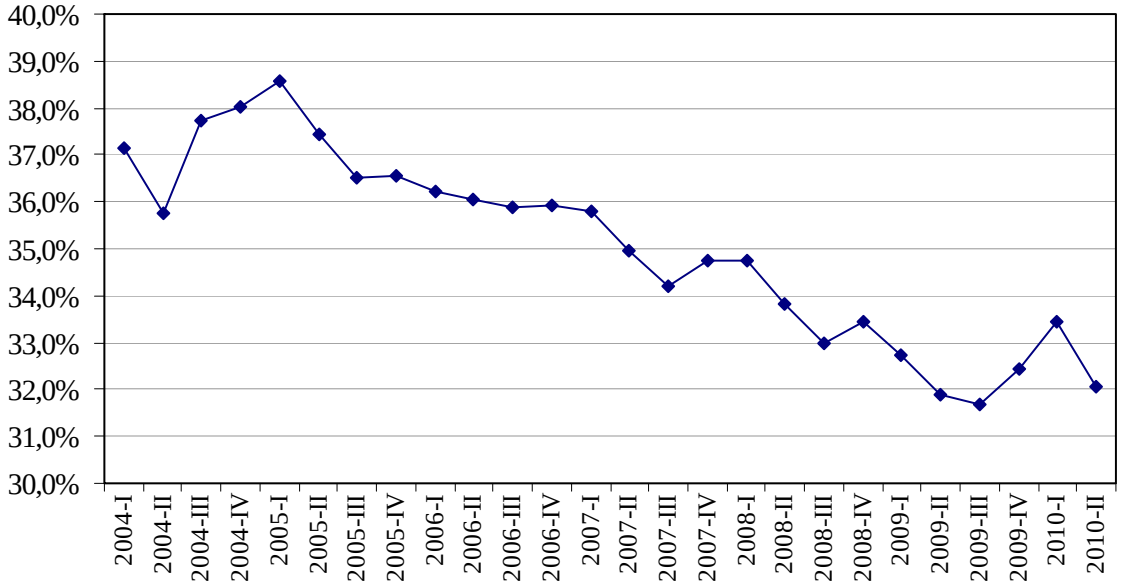
macroeconomic performance by the end of 2009 has already demonstrated some signs of recovery. The dynamics of the GDP growth rate in Macedonia according to the data from the National Statistical Office is shown on Figure 1.

Figure 1. GDP growth rate in Macedonia 2004-2010



Even though the rate of unemployment has remained relatively high, during the same period it has roughly followed the shape of the business cycle. The dynamics of the unemployment rate in Macedonia is shown on Figure 2. We can notice that after 2004, unemployment rate has demonstrated consistent falling trend that has reversed in the third quarter of 2009 thus, following the slump in the GDP growth rate. However, the changes of the unemployment rate in relative terms during the business cycle are rather small, which reflects the depressed characteristics of the Macedonian labour market.

Figure 2. Unemployment rate in Macedonia 2004-2010

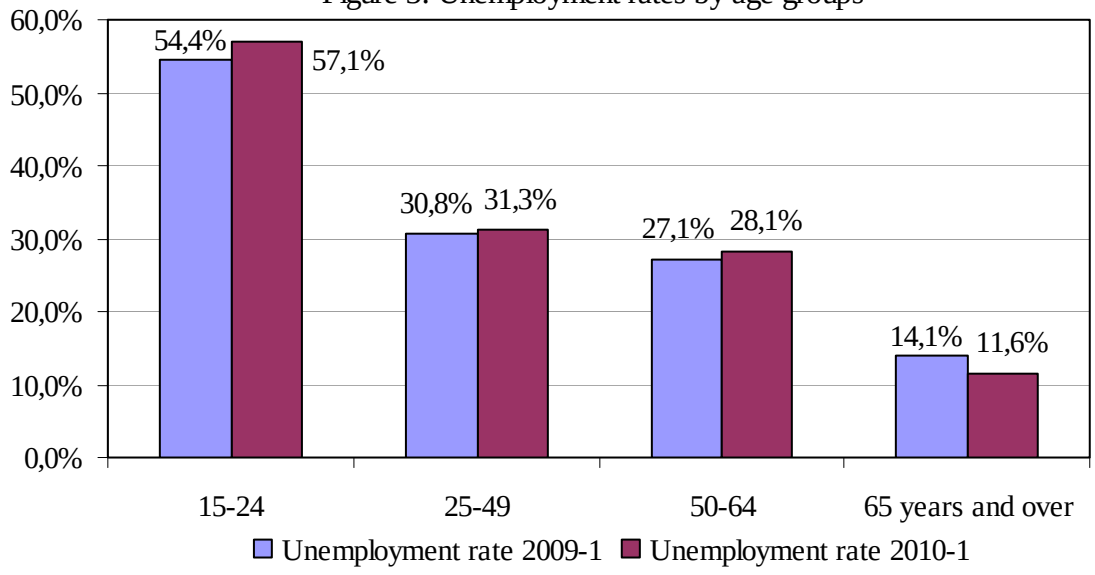


We further disentangle the nature of unemployment in Macedonia by analysing the changes in unemployment rates for particular labour market segments between the first quarter 2009 and the first quarter in 2010. For this purpose we use quarterly LFS data published by the Macedonian Statistical Office.

First, the changes in the unemployment rates by gander shows that unemployment rates among the men has risen from 31.6 to 33.4 percent, whereas during the same period the female unemployment rate has modestly declined from 34.5 to 33.5 percent. This finding is consistent with the global tendencies in the labour markets, since recession mostly affected the sectors that predominantly employ male labour force.

Second, regarding the age distribution of the unemployed, the highest increase in the unemployment rate has been observed among young workers (aged between 15 and 24), from 54.4 to 57.1 percent, followed by modest increase in the unemployment rate of prime age workers (aged between 25 and 49) from 30.8 to 31.3 percent and finally, the unemployment rate of workers close to retirement (aged between 50 and 64) from 27.1 to 28.1 percent. A decrease from 14.1 to 11.6 percent has been registered only among the oldest group of workers (aged 65 years and over). This pattern of distribution of unemployment rates across age groups can be attributed to the fact that younger workers face higher incidence of establishing temporary employment arrangements which, in turn have higher probability of destruction. The changes in the unemployment rates by the age groups in Macedonia are presented in Figure 3.

Figure 3. Unemployment rates by age groups

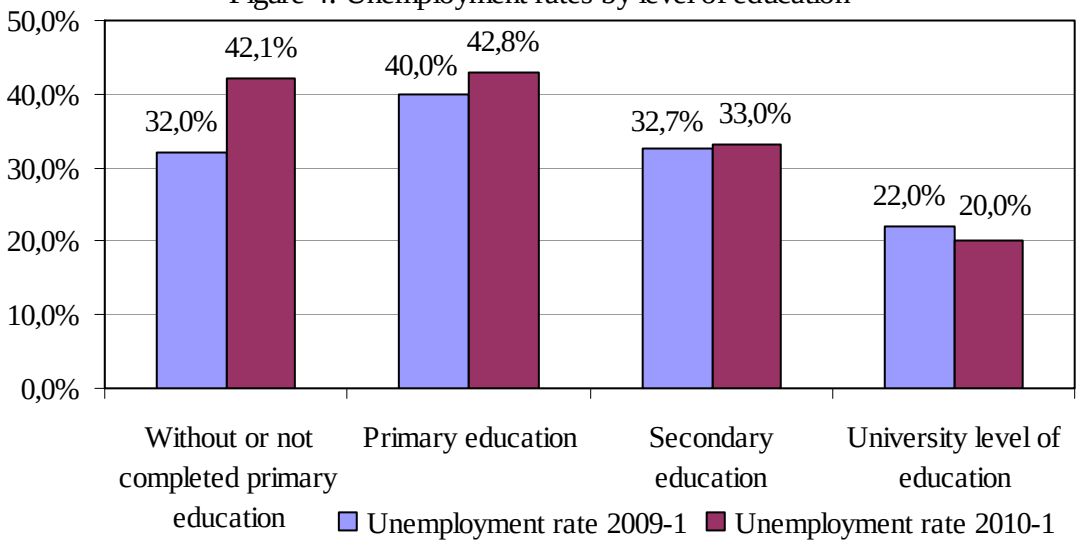


Source: Macedonian Statistical Office

Third, considering the level of education workers without education or uncompleted primary education marked the highest increase in the unemployment rate from 32 to 42.1 percent, followed by workers with primary education (from 40 to 42.8 percent) and secondary education (32.7 to 33 percent). On the other hand, workers with university level of education have experienced a modest decrease in their unemployment rate from 22 to 20 percent. This finding corroborate the global tendency that unskilled

workers have been hit hardest by the economic recession. The changes in the unemployment rates by the level of education in Macedonia are presented in Figure 4.

Figure 4. Unemployment rates by level of education



Source: Macedonian Statistical Office

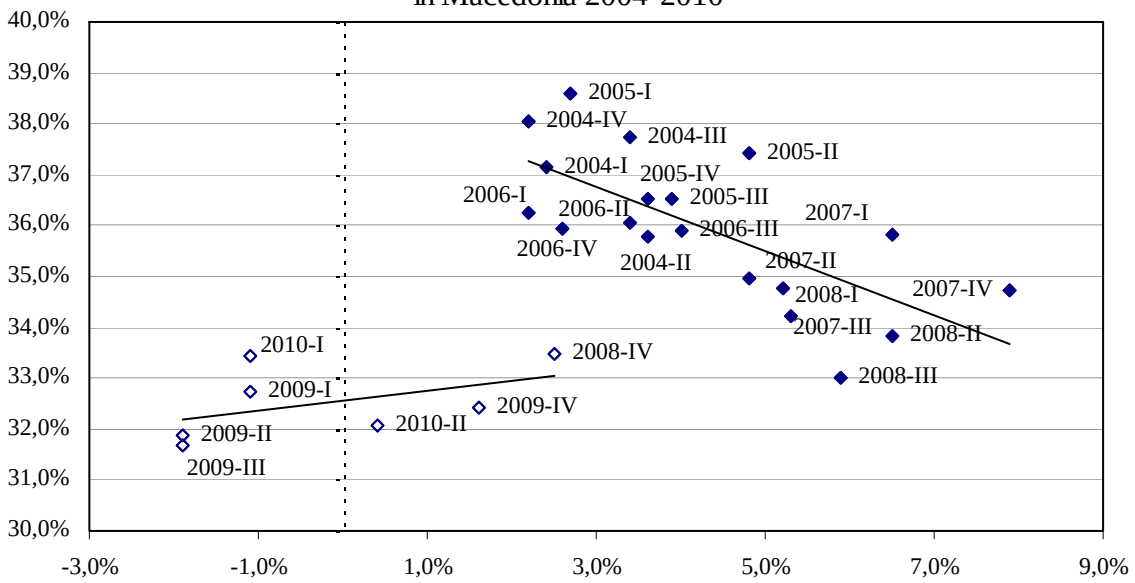
Finally, according to the data from the Macedonian Statistical Office, agriculture, mining, tourism and transportation are the industries that faced the highest burden from the recessional downturn in the Macedonian economy. This, partly explains the patterns of unemployment changes with respect to the gender, age and level of education, since the above industries rely heavily on temporary employment primarily consisting of less educated, males and younger workers.

The labour market and the business cycle in Macedonia

The relationship between unemployment rate and real output growth rate in a given economy has been empirically established by the economist Arthur Okun. According to his findings unemployment rate in United States tended to fall by 1 percentage point for every 3 percentage points rise in gross national product. Okun's relationship stems from the observation that more labour is required to produce more goods and services within an economy (Knotek, 2007). More labour can be obtained either by having the existing employees work longer hours or hiring more workers from the pool of unemployed. Therefore, employment might be logically be expected to move approximately one for one with output, but unemployment rate is less volatile than output. Okun coefficient can change over time because relationship of unemployment to output growth depends on laws, technology, preferences, social customs, and demographics.

In this section we analyse the relationship between the unemployment rate and GDP growth rate in Macedonia for the period 2004-2010. For this purpose we use quarterly data on unemployment rate and GDP growth rate published by the Macedonian Statistical Office. This relationship is graphically presented on Figure 5.

Figure 5. Relationship between Unemployment rate and GDP growth rate in Macedonia 2004-2010



Source: Macedonian Statistical Office

A careful examination for the period of expansion (from 2004-I to 2008-III) shows approximate validity of the Okun's rule of thumb that advocates a negative association between the unemployment rate and GDP growth rate. However, this is not quite evident for the period of recession (from 2008-IV to 2010-II), when unemployment rate remains relatively stagnant despite the downward trend in the output growth.

The possibility of existing a structural break at the beginning of the recession i.e. in the last quarter of 2008 has been examined by applying a Chow test for stability of the regression coefficients. According to this test (the results are presented in Appendix 1), there exists statistical evidence to reject the null hypothesis stating that coefficients of the regression model are stable throughout the entire period 2004-2010.

In order to account for difference in the relationship between two periods, we introduce a dummy variable D_t that takes value 0 for the period of expansion and value 1 for the period of recession. Therefore, we further examine the following regression model:

$$U_t = \alpha_1 + \alpha_2 D_t + \beta_1 g_t + \beta_2 (g_t D_t) + u_t \qquad \dots (1)$$

where, U_t is the quarterly unemployment rate and g_t is the quarterly GDP growth rate. The results from estimation by using the method of ordinary least squares are summarised in Table 1 and presented in details in Appendix 2.

Table 1. Summary results from the estimated regression model (1)

Coefficient	Value	Std. error	t-value	Pr (>| t |)
α_1	38.6132	0.65810	58.6735	0.000
α_2	-6.0284	0,76155	-7.9160	0.000
β_1	-0.6261	0.14476	-4.3250	0.000
β_2	0.8221	0.27603	2.9782	0.007
Multiple R-Squared: 0.7802 F-statistic: 26.03 on 3 and 22 degrees of freedom, the p-value is 0.000 Lagrange multiplier test of residual serial correlation: 1.1525 (0.886)* Ramsey's RESET test for the functional form: 0.8755 (0.349)* Jarque-Bera test for normality of residuals: 0.73498 (0.692)* Koenker-Bassett test for heteroscedasticity: 0.68298 (0.409)* **In the parentheses are given probabilities of obtaining the estimated statistics*				

Source: Author's calculations

From the estimated model in Table 1 we can notice that all coefficients α_1, α_2, β_1 and β_2 are statistically significant at 1 percent level of significance. Moreover, the negative sign of the coefficient β_1 is consistent with the theoretical predictions stated with the Okun's law. In the case of Macedonia, for the period of expansion a 1,6 percentage point increase in the GDP growth rate is associated with decrease of one percentage points in the unemployment rate. On the other hand, in the period of recession, 5,1 percentage point decrease in the GDP growth is associated with increase of one percentage points in the unemployment rate.

From the estimated model, we can conclude that the responsiveness of the unemployment rate to macroeconomic conditions in Macedonia is more than three times higher during times of expansion compared to the period of the economic slump. This finding confirms that Okun relationship differs across the state of the business cycle i.e. it is prone to structural change over time (Beaton, 2010). In the case of Macedonia, the labour market manifests increased rigidity during recession that can be attributed to various factors.

First, the alternative labour market adjustment mechanisms such as employment in the informal sector, emigration and inactivity may play greater role during times of recession compared with times of expansion. This is reasonable since, this forms of adjustment are more characteristic for disadvantaged labour market segments that are hit more seriously by the recession than remaining part of the labour market.

Second, compared with the epicentre of the crisis, the recession in Macedonia started later on and, therefore has had higher probability to last shorter time. As a consequence, most of the employers in the industries concerned by negative economic trends decide to adjust labour demand by reducing the working hours and/or wages of the existing workforce instead of laying off the redundant workers.

The explanatory power of the model measured by the coefficient of determination is relatively high and shows that about 78 percent of the variability of unemployment rate can be attributed to the variability of the GDP growth rate, whereas the remaining part of

the variability is due to other factors that are not included in the model. The F-statistics is relatively high, which means that estimated parameters tested together are statistically significant. The remaining diagnostic tests confirms the validity of the model as well.

Conclusions and policy recommendations

In this paper we have analysed changes in the Macedonian labour market due to the recent recession. The increase in the unemployment rate has been rather modest, which is consistent with our hypothesis that depressed labour markets have generally avoided an additional negative recessional shock. However, the small increment of total unemployment has mainly originated from an increase of unemployment among specific segments in the labour market such as less educated, young and male workers primarily employed in agriculture, mining, tourism and transportation. Hence, the policy measures that should be undertaken in order to mitigate the impact of recession have to be directed to those labour market segments.

The sensitivity of the unemployment rate to changes in growth rate in Macedonia has been much greater during the period before recession. The later start of recession and particular role of the alternative labour market adjustment mechanisms in Macedonia might have generated relatively insignificant transmission of the negative growth rate to the labour market outcomes. This recent experience confirms the important role of the alternative mechanisms such as employment in the informal sector, emigration and non-participation in the cushioning the social and economic consequences of high and persistent unemployment rate.

From this latest episode of the economic development, we have learned several lessons that will guide decision makers in designing and applying appropriate policy measures in the domain of the labour market. First, the labour market issues should be tackled on both demand and supply side which means that increased number of created jobs must be accompanied with wise investments on the side of the quality of the labour force. Second, passive labour market policies have to be redesigned in order to cover mostly the identified vulnerable segments in the Macedonian labour market. Third, a greater accent should be given to the active labour market policies and their complementarities with passive labour market policies. Fourth, the process of formalisation of jobs in the informal part of the economy has to be done prudently with accent to the sustainability of the formalised jobs. Fifth, the role of social transfers to non-participants should be reassessed and adequately redesigned in the light of the planned economic development.

We hope that the above mentioned and other similar policy measures will reach the desired transformation of the labour market performance and will successfully assist the future economic development. However, the measures undertaken in the field of the labour market should be supported by complementarily designed measures in other fields such as education, monetary and fiscal policies. In this context, it is worth mentioning that our policy recommendations are not formulated in the form of an ‘operational plan’, but rather as general directions that should inform the future actions of the policy makers.

Appendix 1

Chow test for structural break

```
                        Ordinary Least Squares Estimation
*******************************************************************************
 Dependent variable is Y
 19 observations used for estimation from 2004Q1 to 2008Q3
*******************************************************************************
 Regressor              Coefficient       Standard Error         T-Ratio[Prob]
 C                         38.6132             .70539            54.7406[.000]
 X                         -.62610             .15516            -4.0351[.001]
*******************************************************************************
 R-Squared                    .48922   R-Bar-Squared                    .45917
 S.E. of Regression          1.0773   F-stat.    F(  1,  17)   16.2821[.001]
 Mean of Dependent Variable  35.9474   S.D. of Dependent Variable      1.4649
 Residual Sum of Squares     19.7303   Equation Log-likelihood       -27.3181
 Akaike Info. Criterion     -29.3181   Schwarz Bayesian Criterion    -30.2626
 DW-statistic                 1.3663
*******************************************************************************


                              Diagnostic Tests
*******************************************************************************
*    Test Statistics  *        LM Version        *         F Version          *
*******************************************************************************
*                     *                          *                            *
* A:Serial Correlation*CHSQ(   4)=   3.7194[.445]*F(   4,  13)=   .79107[.551]*
*                     *                          *                            *
* B:Functional Form   *CHSQ(   1)=   .72066[.396]*F(   1,  16)=   .63080[.439]*
*                     *                          *                            *
* C:Normality         *CHSQ(   2)=   .79778[.671]*       Not applicable       *
*                     *                          *                            *
* D:Heteroscedasticity*CHSQ(   1)=   .82208[.365]*F(   1,  17)=   .76881[.393]*
*                     *                          *                            *
* E:Predictive Failure*CHSQ(   7)=  56.6971[.000]*F(   7,  17)=   8.0996[.000]*
*                     *                          *                            *
* F:Chow Test         *CHSQ(   2)=  62.6675[.000]*F(   2,  22)=  31.3337[.000]*
*******************************************************************************
   A:Lagrange multiplier test of residual serial correlation
   B:Ramsey's RESET test using the square of the fitted values
   C:Based on a test of skewness and kurtosis of residuals
   D:Based on the regression of squared residuals on squared fitted values
   E:A test of adequacy of predictions (Chow's second test)
   F:Test of stability of the regression coefficients
```

Appendix 2

Estimation of the model: $U_t = \alpha_1 + \alpha_2 D_t + \beta_1 g_t + \beta_2 (g_t D_t) + u_t$

```
                      Ordinary Least Squares Estimation
*******************************************************************************
 Dependent variable is Y
 26 observations used for estimation from 2004Q1 to 2010Q2
*******************************************************************************
 Regressor             Coefficient       Standard Error         T-Ratio[Prob]
 C                        38.6132             .65810            58.6735[.000]
 D                        -6.0284             .76155            -7.9160[.000]
 X                        -.62610             .14476            -4.3250[.000]
 X1                        .82209             .27603             2.9782[.007]
*******************************************************************************
 R-Squared                    .78020   R-Bar-Squared                    .75023
 S.E. of Regression          1.0051   F-stat.    F(  3,  22)   26.0307[.000]
 Mean of Dependent Variable  35.0308   S.D. of Dependent Variable      2.0111
 Residual Sum of Squares     22.2249   Equation Log-likelihood       -34.8529
 Akaike Info. Criterion     -38.8529   Schwarz Bayesian Criterion    -41.3691
 DW-statistic                 1.7296
*******************************************************************************


                             Diagnostic Tests
*******************************************************************************
*    Test Statistics  *        LM Version        *         F Version          *
*******************************************************************************
*                     *                          *                            *
* A:Serial Correlation*CHSQ(   4)=   1.1525[.886]*F(   4,  18)=   .20872[.930]*
*                     *                          *                            *
* B:Functional Form   *CHSQ(   1)=   .87550[.349]*F(   1,  21)=   .73177[.402]*
*                     *                          *                            *
* C:Normality         *CHSQ(   2)=   .73498[.692]*       Not applicable       *
*                     *                          *                            *
* D:Heteroscedasticity*CHSQ(   1)=   .68298[.409]*F(   1,  24)=   .64745[.429]*
*******************************************************************************
   A:Lagrange multiplier test of residual serial correlation
   B:Ramsey's RESET test using the square of the fitted values
   C:Based on a test of skewness and kurtosis of residuals
   D:Based on the regression of squared residuals on squared fitted values
```

References

[1] Arpaia, A. and Curci, N. (2010) "EU Labour Market Behaviour during the Great Recession", *European Commission Economic Papers*, 405;

[2] Beaton, K. (2010) "Time Variation in Okun's Law: A Canada and U.S. Comparison", *Bank of Canada Working Paper, 2010-7;*

[3] Borbely, J. M. (2009) "U.S. Labor Market in 2008: Economy in Recession", Monthly Labor Review, March;

[4] Clancy, G. (2009) "The Impact of the Recession on the Labour Market", UK Office for National Statistics, May;

[5] Elsby, M., Hobijn, B. and Sahin, A. (2010) "The Labor Market in the Great Recession", Brookings Panel on Economic Activity, March;

[6] Gronqvist, C. and Kinnunen, H. (2009) "Impact of Recession on Labour Supply: Experiences form the 1990s in Finland", Bank of Finland Monetary Policy and Research, October;

[7] Knotek, E. (2007) "How Useful is Okun's Law?", *Federal Reserve Bank of Kansas City, Economic Review, fourth quarter;*

[8] Knotek, E. and Terry, S. (2009) "How Will Unemployment Fare Following the Recession?", *Federal Reserve Bank of Kansas City, Economic Review, third quarter;*

[9] Nikoloski, D. (2004) "Some Aspects of the Problem of Unemployment in Macedonia", *Economic Development, Vol.6, No.1-2-3, pp.241-260;*

[10] Nikoloski, D. (2009) "The sustainable rate of unemployment in transition countries – A case study for Macedonia", *VDM Verlag;*

[11] Sissons, P. (2009) "Welfare Reform and Recession: Past Labour Market Responses to Job Losses and the Potential Impact of Employment Support Allowance", People, Place & Policy Online, 3/3, pp.171-182;

[12] Tapp, S. (2009) "Canadian Labour Market Developments: Recession Impacts, Recent Trends and Future Outlook", Office of the Parliamentary Budget Officer, July;

[13] Verick, S. (2009) "Who is Hit Hardest during a Financial Crisis? The Vulnerability of Young Men and Women to Unemployment in an Economic Downturn", *IZA Discussion Paper* No.4359;

[14] Verick, S. and Islam, I. (2010) "The Great Recession of 2008-2009: Causes, Consequences and Policy Responese", *IZA Discussion Paper* No.4934;