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The role of the alternative labour market adjustment mechanisms in Macedonia during the economic crisis





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About

Shortly after the end of the Kosovo war, the last of the Yugoslav dissolution wars, the Balkan Reconstruction Observatory was set up jointly by the Hellenic Observatory, the Centre for the Study of Global Governance, both institutes at the London School of Economics (LSE), and the Vienna Institute for International Economic Studies (wiiw). A brainstorming meeting on Reconstruction and Regional Co-operation in the Balkans was held in Vouliagmeni on 8-10 July 1999, covering the issues of security, democratisation, economic reconstruction and the role of civil society. It was attended by academics and policy makers from all the countries in the region, from a number of EU countries, from the European Commission, the USA and Russia. Based on ideas and discussions generated at this meeting, a policy paper on Balkan Reconstruction and European Integration was the product of a collaborative effort by the two LSE institutes and the wiiw. The paper was presented at a follow-up meeting on Reconstruction and Integration in Southeast Europe in Vienna on 12-13 November 1999, which focused on the economic aspects of the process of reconstruction in the Balkans. It is this policy paper that became the very first Working Paper of the wiiw Balkan Observatory Working Papers series. The Working Papers are published online at www.balkan-observatory.net, the internet portal of the wiiw Balkan Observatory. It is a portal for research and communication in relation to economic developments in Southeast Europe maintained by the wiiw since 1999. Since 2000 it also serves as a forum for the Global Development Network Southeast Europe (GDN-SEE) project, which is based on an initiative by The World Bank with financial support from the Austrian Ministry of Finance and the Oesterreichische Nationalbank. The purpose of the GDN-SEE project is the creation of research networks throughout Southeast Europe in order to enhance the economic research capacity in Southeast Europe, to build new research capacities by mobilising young researchers, to promote knowledge transfer into the region, to facilitate networking between researchers within the region, and to assist in securing knowledge transfer from researchers to policy makers. The wiiw Balkan Observatory Working Papers series is one way to achieve these objectives.



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This study has been developed in the framework of research networks initiated and monitored by wiiw under the premises of the GDN–SEE partnership.

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1. Introduction

The process of transition represents an interesting laboratory characterised by tremendous variations in key variables which has had profound consequences for the economic, political and social sphere. During the two decades long period of transition according to the identified employment trends, the Macedonian labour market has been characterised by 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 moving into employment due to insufficient job creation in the formal sector (Micevska, 2008; Nikoloski, 2009). With respect to this, the Macedonian labour market shares similar characteristics with those in other South-Eastern European countries (SEECs), called ‘lagging reformers’, that still face significant reform challenges (Nikoloski, 2009; Becker et al., 2010).

Under these circumstances alongside the traditional forms of adjustment additional mechanisms have emerged in Macedonia, such as employment in the informal sector, inactivity and emigration. The investigation of the interrelation between the unemployment and these labour market adjustment mechanisms is of particular importance since it enables to identify their role in cushioning the economic and social consequences of persistent unemployment. Hence, it is necessary to assess the alternative labour market adjustment mechanisms from the perspective of their capacity to absorb a part of the unemployed workforce and providing additional income for the households.

The above outline constitutes the framework within which we will undertake our research *i.e.* clarifying the reasons for the unfavourable labour market outcomes in Macedonia and the role of alternative labour market adjustment mechanisms during the recent crisis. In this context, we will attempt to answer the following questions: Why does the Macedonian labour market continue to under-perform relative to those in advanced transition countries and how has the economic recession affected its conditions? What are the reasons for the high and sustained unemployment rates and who are the most concerned with this problem? How do the labour market adjustment mechanisms contribute to alleviating the unemployment problem and what are the appropriate policy reforms that the government should apply in response to this labour market failure?

Therefore, in this paper we address three research issues. First, we are interested in assessing the impact of the recent economic recession on the general labour market performance in Macedonia. Second, we consider the question of how the economic crisis has affected different labour market segments. Finally, we intend to explore the role of the non-traditional labour market adjustment mechanisms such as employment in the informal sector, non-participation and emigration from the perspective of their capacities to absorb a part of the unemployed workforce.

The aim of this research 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. The report is structured as follows: First, we review the main impacts of the recession on the labour market conditions worldwide and in Macedonia, respectively. We continue by analysing 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 the recession. In addition, we explore the recent labour market performance in Macedonia by breaking down the unemployment rate for different labour market segments. In the heart of the analysis, we assess the alternative labour market adjustment mechanisms based on a survey of registered unemployed. We argue that this recent episode may be used as an indicator of the role these adjustment mechanisms play that would further enable the identification of the Macedonian labour market perspectives in the period of the post-recessional development. Finally, we conclude and present some policy recommendations.

2. The worldwide experience

Most of the analyses of the impact of current recession on the labour market performance in developed countries have 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 the United States by the end of 2007 and rapidly spread 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 has 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 the United States were an epicentre of the crisis, its economic consequences were unevenly distributed across different countries. The greater part of the developed world, including European Union and Japan, has 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 layoff 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 Verick and Islam (2010).

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.

3. The case of Macedonia

3.1 General labour market performance

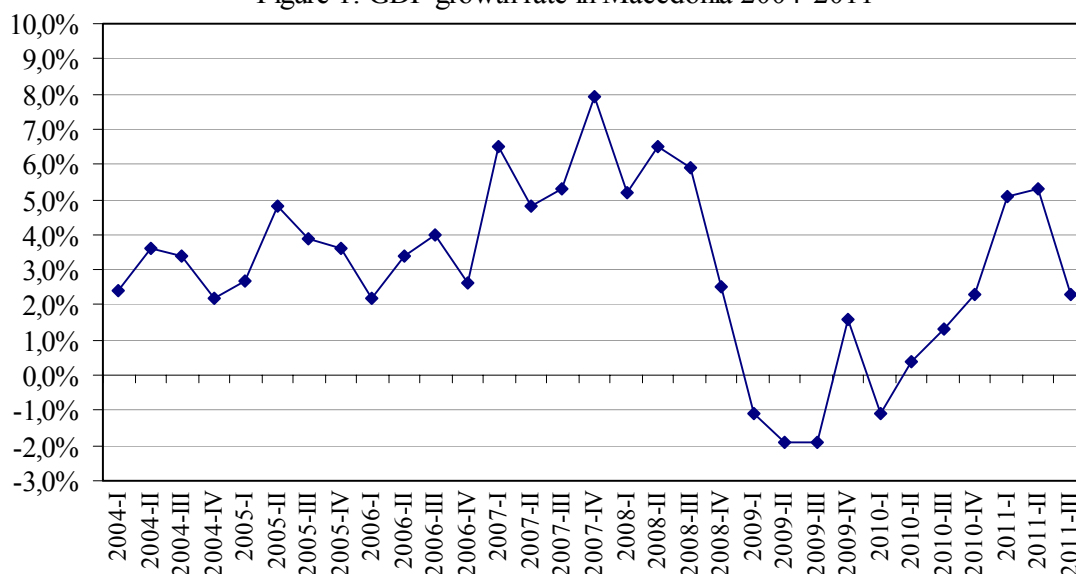
Macedonia entered the process of transition with a very unfavourable situation in the labour market. For instance in 1990, the year considered as the starting point of transition, the rate of unemployment was 23%¹, which was extremely high compared to other developing countries at that time. The main reason for such a high rate of unemployment was the specific structure of Macedonian economy and the lack of growth centres for economic development. A considerable part of the Macedonian employed labour force was attached to non-competitive low productivity sectors such as the textile industry, wood processing industry, mining etc. Furthermore, there were no substantial investments in new technologies or in the final processing industries because of various political and economic reasons.

The evolution of the Macedonian real GDP corresponds to the stylised facts characteristic for other transition countries i.e. demonstrating a U-shaped pattern. The lowest level of GDP during the first period of transition was attained in 1995 which represented about 79% of the 1990 level. Although comparable in its magnitude to that found in other CEECs and the Baltic states, the GDP slump in Macedonia occurred several years later, indicating the late start of reforms. The transformational recession was

¹ This unemployment rate is based on data from the state employment office.

followed by a period of gradual recovery in GDP (1996-2000) which was interrupted in 2001 due to political instability at that time. Despite its return to growth typical of the second phase of transition, Macedonia is still lagging behind advanced transition countries since only in 2006 did its real GDP finally attain its pre-transitional level. Macedonia and the region of SEECs have not remained apart from the global negative macroeconomic tendencies engendered from the recent economic crisis. Although recession in Macedonia 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 State Statistical Office is shown in Figure 1.

Figure 1. GDP growth rate in Macedonia 2004-2011



The policy mix followed by the successive Macedonian governments during the whole period of transition has been characterised by highly restrictive monetary and fiscal policies. The tightness of the monetary policy can be viewed first, in the low level of money supply growth and second, in the high real interest rate relative to the euro zone both of which restrain the development of the real sector (Gligorov and Mojsovska, 2005). On the other side, Macedonia has conducted prudent fiscal policy since on average, the general budget deficit during the considered time period was below 2% of the GDP and largely unaffected by the political business cycle. This policy mix has contributed to the slow development of the Macedonian economy, which is eventually translated into a low rate of job creation and persistent unemployment.

In order to investigate the features of the Macedonian labour market during transition, it is appropriate to divide the transitional period into two sub-periods. The first period encompasses the transformational recession from 1990 to 1995, with the second period starting immediately thereafter and lasting until the present. 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 (Nikoloski, 2004).

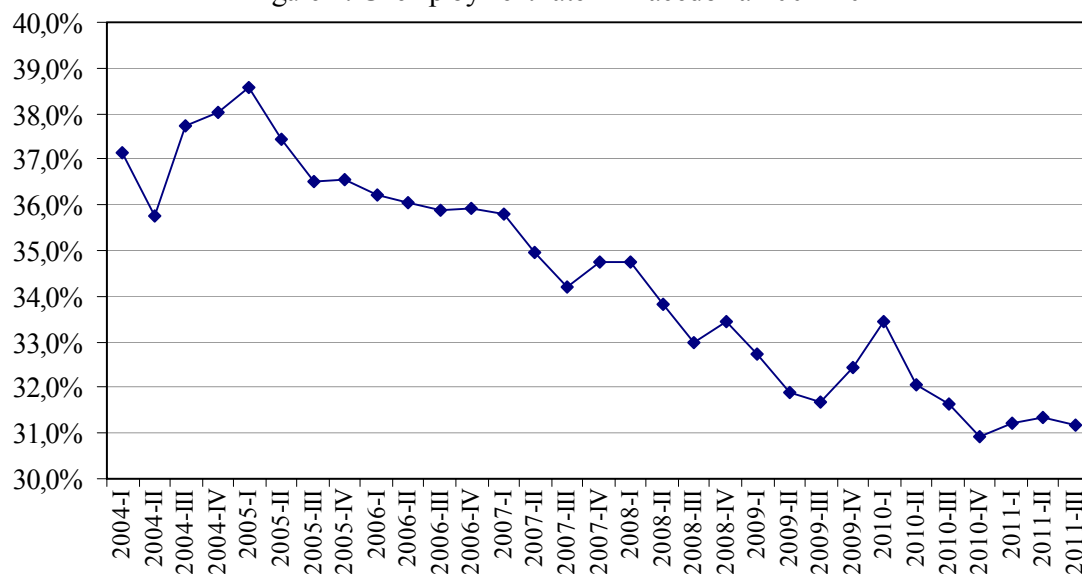
The first Labour Force Survey (LFS) in Macedonia was conducted in 1996, and since then we have detailed data concerning labour market trends. During the period

1996-2003, the Macedonian LFS was conducted on a yearly basis, whereas since 2004 it is conducted as a continuous survey throughout the year with quarterly processing of data. For the period prior to 1996 we can explore labour market trends based on the number of registered unemployed workers. According to both sources of data we can generally distinguish several features of the Macedonian labour market presented as follows.

First, during the initial phase of transition, the labour force participation and employment rates fell for most of this period, while the unemployment rate steadily increased. These trends are in line with the normal labour market patterns found in the CEECs *i.e.* declining employment under the initial shock of recession and subsequent persistence of sluggish demand for labour.

Second, the mature phase of transition is characterised by broad stability in all three rates. However, we can observe recessions in 2001 (primarily caused by the already mentioned political instability) and in 2009 due to the global economic crisis. The downward trend in the unemployment rate was broken and unexpectedly remained high for several years due to the lack of job creation in the formal part of the economy (Micevska, 2008). Only recently, there are some positive signs of a slow recovery and the possibility of renewed decreases in unemployment. The dynamics of the unemployment rate in Macedonia for the period 2004-2011 is shown in Figure 2.

Figure 2. Unemployment rate in Macedonia 2004-2011



From Figure 2, we can notice that after 2004, the 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.

Third, the Macedonian labour market is affected by strong segmentation, meaning that certain social groups such as youths, less skilled workers, and women, face a higher risk of unemployment and inactivity than the rest of the labour force. As a consequence, the high Macedonian unemployment rate has enormous social implications such as rising

poverty, income inequality and social exclusion of deprived social segments (Nikoloski, 2011). The impact of the recent economic crisis on the labour market segmentation in Macedonia will be subject of analysis in the following section.

Fourth, long-term unemployment prevails over the short-term unemployment implying likelihood of possible ‘discouraged workers’ phenomenon. For instance, long-term unemployment accounts for almost 80% of total unemployment and has significantly contributed to an erosion of skills and motivation of unemployed workers, making them less employable over time. The deterioration of skills further reduces the attractiveness of the labour force and contributes to a blurring of the difference between the states of unemployment and inactivity. After remaining unemployed for a long period of time, a considerable part of unemployed workers stops looking for jobs and quit the labour force.

Fifth, the sectoral reallocation of labour has been characterised by a significant increase of subsistence agriculture and other non-standard forms of employment at the expense of rapid shrink of employment in industry. These trends in employment by sectors indicate that in Macedonia new jobs are not predominantly created in the more productive industries and service sector, but rather in agriculture and low productivity services. The increase in the share of employment in agriculture suggests that this sector has become a buffer for some people who have lost their jobs in the state-owned industrial enterprises (Nikoloski, 2009).

3.2 The impact on labour market segmentation

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.

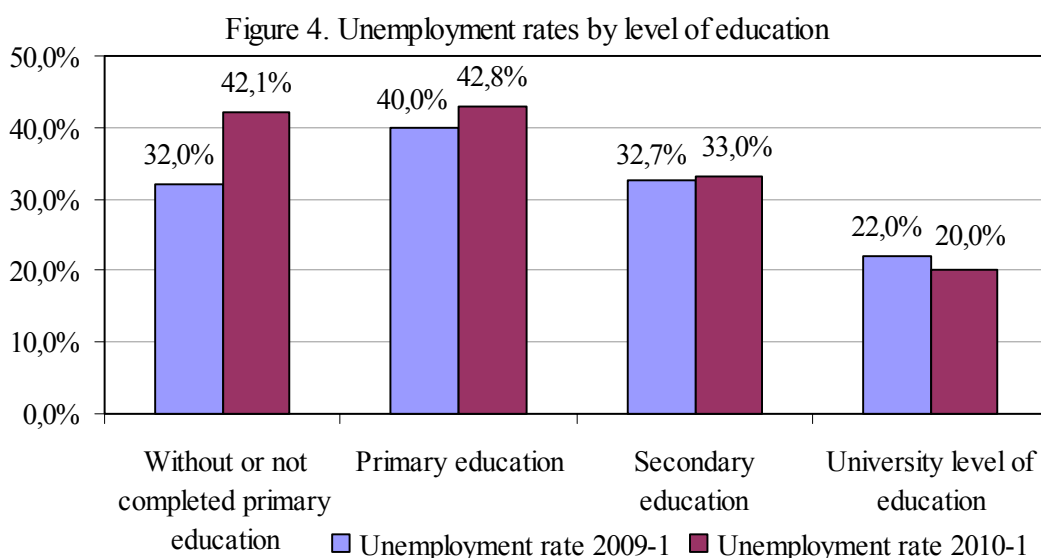
First, the changes in the unemployment rates by gender show that unemployment rates among the men have risen from 31.6% to 33.4%, whereas during the same period the female unemployment rate has modestly declined from 34.5% to 33.5%. This finding is consistent with the global tendencies in the labour 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%, followed by modest increase in the unemployment rate of prime age workers (aged between 25 and 49) from 30.8% to 31.3% and finally, the unemployment rate of workers close to retirement (aged between 50 and 64) from 27.1% to 28.1%. A decrease from 14.1% to 11.6% 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.



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%, followed by workers with primary education (from 40% to 42.8%) and secondary education (32.7% to 33%). On the other hand, workers with university level of education have experienced a modest decrease in their unemployment rate from 22% to 20%. This finding corroborates 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.



Source: Macedonian Statistical Office

Finally, according to the data from the Macedonian State Statistical Office, agriculture, mining, tourism and transportation are the industries that bear the highest

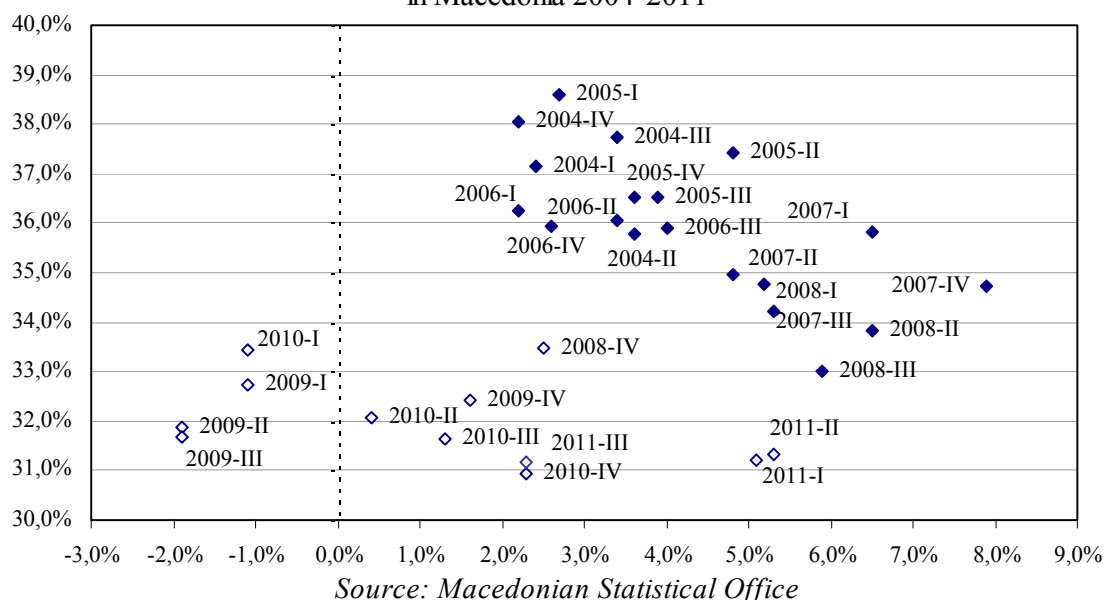
burden from the recessional downturn in the Macedonian economy. This partly explains the patterns of unemployment changes with respect to the gender, age and level of education, since the above industries rely heavily on temporary employment primarily consisting of less educated, males and younger workers.

3.3 The labour market and the business cycle

The relationship between the unemployment rate and the real output growth rate in a given economy has been empirically established by the economist Arthur Okun. According to his findings the 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 the output, but the unemployment rate is less volatile than the output. Okun coefficient can change over time because the 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 2004-2011. 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 in Figure 5a.

Figure 5a. Relationship between unemployment rate and GDP growth rate in Macedonia 2004-2011

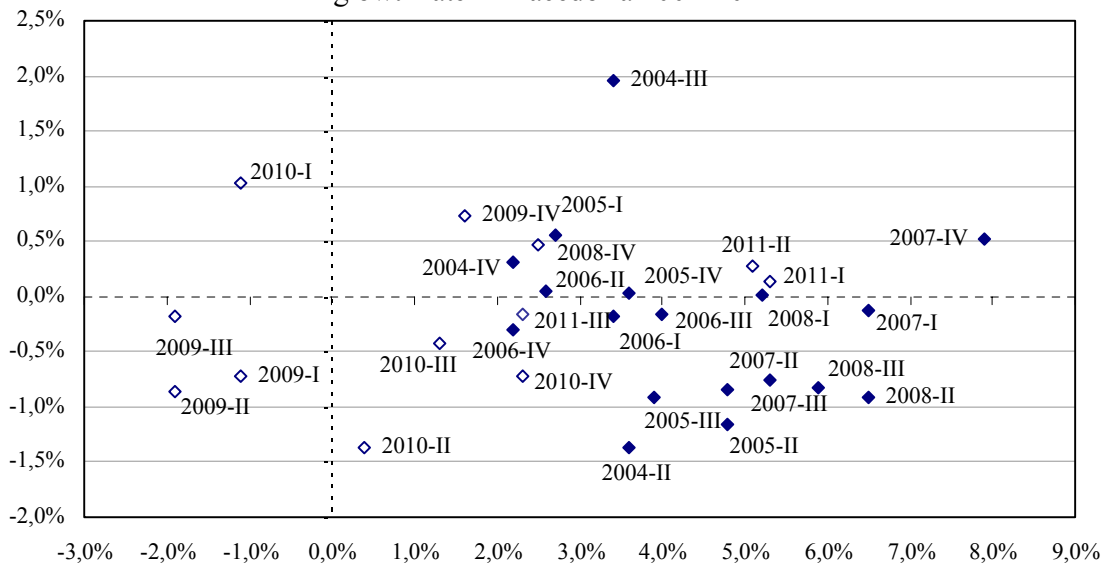


A careful examination for the period of expansion (from 2004-I to 2008-III) shows approximate validity of the Okun's rule of thumb that advocates a negative association between the unemployment rate and GDP growth rate. However, this is not quite evident for the period after the start of recession (from 2008-IV to 2011-III), 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, a statistical evidence exists to reject the null hypothesis stating that coefficients of the regression model are stable throughout the entire period 2004-2011. The results of the test for structural stability are presented in Appendix 1.

In order to account for the difference in the relationship between the two periods, we will introduce a dummy variable D_t that takes value 0 for the period of expansion and value 1 for the period of recession. We further examine the relationship between the change in unemployment rate and GDP growth rate. Thus relationship is graphically presented in Figure 5b.

Figure 5b. Relationship between change in unemployment rate and GDP growth rate in Macedonia 2004-2011



Source: Macedonian Statistical Office

From Figure 5b we can notice that the delineation between the two periods, when it comes to the relationship between the change in the unemployment rate and GDP growth rate, becomes less obvious. Moreover, in this case it is difficult to draw any conclusion about the possible pattern of relationship that corroborates with the theoretical assumption of the Okun's law. We can attribute this situation to the stagnant unemployment rate, which remains relatively unresponsive to the changes in the GDP growth rate. Therefore, in the modelling the Okun's relationship instead of the changes in unemployment rate Δu_t , as dependent variable we will consider the unemployment rate u_t .

In our econometric analysis we will examine the 'static version' of the Okun's law represented by the following regression model:

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

where, u_t is the quarterly unemployment rate and g_t is the quarterly GDP growth rate. The results from the estimation by using the method of ordinary least squares (OLS) are summarised in Table 1.

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

Coefficient	Value	Std. error	t-value	Pr (> t)
α_1	38.6132	0.6497	58.4261	0.000
α_2	-6.4219	0.72575	-8.8486	0.000
β_1	-0.6261	0.14293	-4.3805	0.000
β_2	0.4777	0.18758	2.5465	0.017
Multiple R-Squared: 0.83492				
F-statistic: 45.52 on 3 and 27 degrees of freedom. the p-value is 0.000				
Lagrange multiplier test of residual serial correlation: 0.10684 (0.979)*				
Ramsey's RESET test for the functional form: 0.66857 (0.421)*				
Jarque-Bera test for normality of residuals: 1.1556 (0.561)*				
Koenker-Bassett test for heteroscedasticity: 0.59368 (0.447)*				
*In the parentheses are given probabilities of obtaining the estimated statistics				

Source: Authors' 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% 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 the responsiveness is much weaker, since the slope coefficient in absolute terms drops from -0.6261 to -0.1484 ($\beta_1 + \beta_2$).

From the estimated model, we can conclude that the responsiveness of the unemployment rate to macroeconomic conditions in Macedonia is more than four 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 and 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 more emphasised role during times of recession compared with times of expansion. This is reasonable since, these forms of adjustment are more characteristic for disadvantaged labour market segments that are hit more seriously by the recession than the 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 and has milder impact. As a consequence, most of the employers in the industries concerned by negative economic trends decided 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 83% of the variability of the 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 confirm the validity of the model as well.

4. Results from the empirical analysis

As stated before, the high and sustained unemployment rate in Macedonia has been coupled with various forms of labour market adjustment mechanisms. The conventional (standard) forms of labour market adjustment are characteristic for the employed workers, whereas non-standard forms are mainly alternatives for the unemployed workers. Among the alternative adjustment mechanisms we will pay particular attention to the role of employment in the informal sector, emigration and social transfers. As informal economic activities will be considered only those who are legal in nature but not officially registered such as subsistence farming. The emigration as a coping strategy will include temporary work abroad as well as reliance on remittances from the relatives who are permanent emigrants. Finally, the inactivity will mainly encompass reliance on social transfers including both direct and inter household transfers.

To our knowledge, in Macedonia there is a lack of consistent cross-section data about different alternative labour market adjustment mechanisms. In order to estimate to what extent the unemployed workers are prone toward the above mentioned non-standard forms of adjustment we have designed and carried out a survey based on a sample of registered unemployed workers. The survey was conducted during a reference period from mid October to mid November 2011, whereas the sample consisted of 2300 unemployed workers selected randomly in each of 30 branch offices of the Employment Service Agency (ESA) all over the country. Due to the lack of exhaustive lists of registered unemployed that are confidential, the interviewers had freedom to choose eligible respondents from their surrounding. Moreover, the geographical distribution was maintained by selecting from each branch office a proportional number of respondents with respect to the total number of registered unemployed workers. The structure of the sample according to the basic demographic characteristics is given in Table 2.

In order to assess the alternative labour market adjustment mechanisms, we have designed a questionnaire which consists of 53 questions. Most of the questions are close-ended questions with multiple choices, i.e. they are accompanied by a range of answers from which the respondent is asked to indicate which answer best applies to him. Only two questions are open ended in order to get personal opinion from the respondent about the feeling of being unemployed and his intentions in order to get employed. Alongside the questions about the various economic activities or sources of income we attempted to assess the adjustment mechanisms indirectly by using the time allocation to various activities as well as personal values and perceptions. The entire questionnaire is presented in Appendix 2.

Table 2. The structure of the sample according to various demographic characteristics

Gender		Place of living		Age	
Male	50.30%	Urban	77.89%	15-20	4.09%
Female	49.70%	Rural	22.11%	21-25	23.27%
				26-30	19.23%
				31-35	11.70%
Education		Ethnicity		36-40	10.61%
Primary or less	15.11%	Macedonian	81.80%	41-45	10.61%
Secondary	50.35%	Albanian	10.21%	46-50	8.96%
Higher	34.54%	Turk	2.26%	51-55	6.92%
		Roma	2.26%	56-60	3.61%
Marital status		Serbian	1.95%	61-65	0.87%
Single	40.43%	Vlahos	1.00%	65 and more	0.13%
Married	53.66%	Bosnian	0.35%		
Divorced	3.74%	Other	0.17%		
Widowed	2.18%				

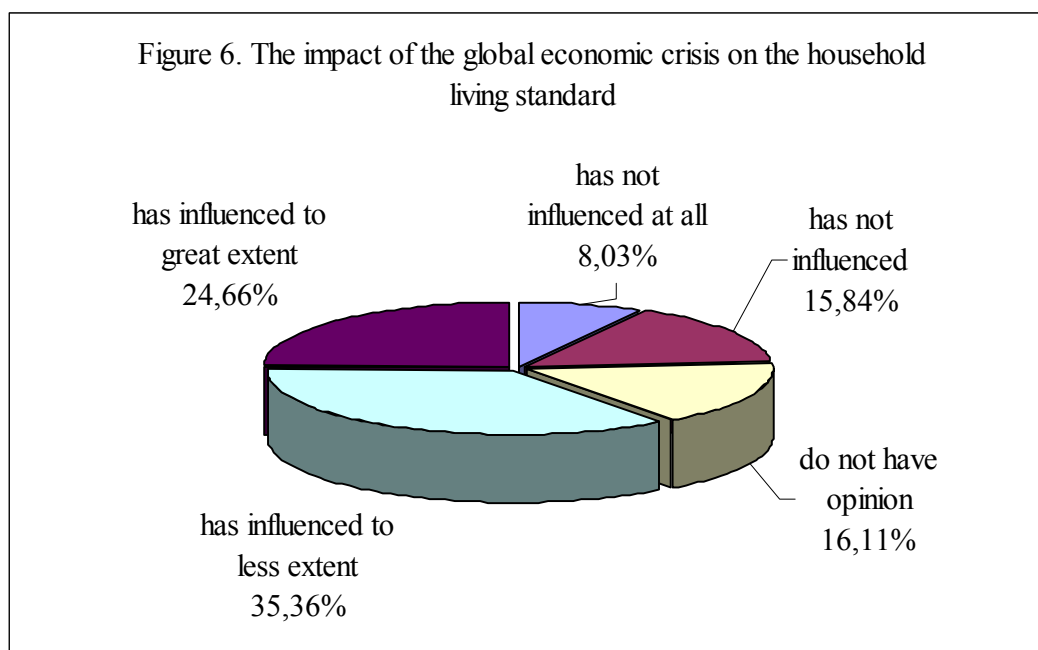
Source: Authors' calculations

According to the results from the survey, 21.5% of the respondents are short-term unemployed, whereas 78.5% are unemployed for more than one year i.e. they are long-term unemployed. The majority of the surveyed unemployed (70.9%) find that the Macedonian government is most responsible for the high unemployment rate in Macedonia and even higher percent (73.7%) think that the government is the most important factor which is responsible for solving the unemployment problem. Almost two thirds of the respondents are dissatisfied with the situation because they think that membership in political parties to great extent influences the employment process in Macedonia. As a consequence, the unemployment represents an embarrassing situation for the majority of unemployed workers. In this context, 38.2% of the respondents declared that unemployment causes for them stress situations and health problems to great extent, while these effects prevail to lesser extent among 44.8% of the interviewed unemployed.

With respect to the services that registered unemployed receive from the ESA, 60.72% of the respondents stated that they have received health insurance, whereas only 8.46% receive unemployment benefit. These figures are close to the official statistics that ESA publishes about the services provided for the registered unemployed workers (ESA, 2011). Having in mind the low coverage of unemployment benefits, we argue that incentives for registering as unemployed in Macedonia come from other entitlements. On the other hand, participation in some of the active programmes or measures of the ESA declared about 9.85% of the respondents of whom only a small portion of 16% acknowledged that the attended programmes helped them to find job.

With respect to the question how the unemployed workers see themselves after five years, about 15.1% think they will be still unemployed, whereas 22.7% do not have opinion. In contrast, about 39.7% of the respondents hope they will find formal job, while the remaining 22.5% would search for alternative opportunities such as employment in the informal sector (5.3%), emigration (13.1%) or retirement (4%). This finding reflects relatively mixed perceptions among unemployed workers regarding their future prospects on the labour market.

Regarding the impact of recent economic crisis, the majority of respondents declared that the global economic downturn negatively influenced their household living standard either to greater or lesser extent (24.66% and 35.36% respectively). A smaller share of surveyed unemployed stated that global economic crisis either has not influenced or has not influenced at all their living standards (15.84% and 8.03% respectively), whereas sizeable percentage of 16.11% do not have opinion. The distribution of respondents' opinions with respect to this question is presented in Figure 6.



In order to estimate the role of the labour market adjustment mechanisms in providing additional income for the unemployed, we further calculate the percentage share of each source in the total household income for various categories of households. According to the sources of income we divide the households in five different categories: (i) households that have income from informal employment; (ii) households that have income from pensions; (iii) households that have income from remittances; (iv) households that have income from unemployment benefits; and, (v) households that have income from social assistance. We should notice that in calculation of the figures some households are counted more than once in the cases if their income is generated from different sources. The results are summarised in Table 3.

From Table 3 we can notice that almost two thirds of the incomes in an average household come from the salaries of the formally employed members. Furthermore, income from additional informal economic activities accounts for 16.5%, the share of pensions is 9.4%, the share of remittances is 5.3%, whereas the smallest shares are those of the unemployment benefits and social assistance (1.6% and 0.9% respectively). Therefore, the income generated in the formal employment for an average household represents the most important part of the total income, while its relative share considerably decreases for the households who rely on the alternative sources of income.

Table 3. The percentage share of various sources in the total household income

Source of income	Average household	Respondents declared having income from informal employment	Respondents declared having retired member(s) in the household	Respondents declared having emigrated close relatives	Respondents declared receive unemployment benefit	Respondents declared receive social assistance
Salaries	66.3%	50.3%	53.3%	47.0%	51.1%	44.2%
Informal employment	16.5%	34.3%	14.9%	16.6%	15.9%	21.2%
Pensions	9.4%	8.2%	25.0%	6.0%	8.8%	9.1%
Remittances	5.3%	4.9%	4.6%	28.2%	7.8%	8.1%
Unemployment benefit	1.6%	1.3%	1.4%	1.3%	13.5%	4.8%
Social assistance	0.9%	1.0%	0.9%	0.9%	2.9%	12.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Authors' calculations

The relative shares of the above stated sources of income differ for various categories of households. For instance, the relative share of income from informal employment attains 34.3% for those respondents who declared having income from informal employment. For the respondents who declared having retired member(s) in the household, pensions represents 25% of their total income. The relative share of income from remittances attains 28.2% for those respondents who declared having emigrated close relatives. Furthermore, unemployment benefits represent 13.5% of the total income for the respondents who declared that receive such type of compensation. Finally, the relative share of the social assistance is 12.7% for the households that receive social assistance. Hence, different sources of income play significant role as generators of income for particular types of households.

4.1 The labour market attachment

In order to define the concept of labour market attachment we first revise the standard labour markets indicators. The labour force statistics divide the adult population into three mutually exclusive groups or labour market states: the employed, the unemployed and the inactive. The employed consist of all workers who during a reference period reported to be in paid employment. The unemployed comprise those persons who satisfy the following three conditions: (i) without work, (ii) immediately available to start work, and (iii) actively look for a job during the preceding four weeks. Those who are neither employed nor unemployed are considered inactive and are excluded from the labour force.

The above categorisation has been proven useful for analysing labour market development in different countries. However, within each of the standard labour force categories might be significant heterogeneity. The unemployment in a given country is

traditionally measured by the unemployment rate calculated as a proportion of unemployed in the labour force. Although the unemployment rate is regarded as a key indicator of labour market performance, it does not capture all forms of labour market slack (OECD, 2002). When unemployment is high and stagnant, there exist a considerable number of workers on the borderline between unemployment and non-participation. Moreover, depressed labour markets are often characterised by non-standard forms of employment that may also co-exist with the officially declared unemployment status of respondents. Therefore, the officially calculated unemployment rate may vary with respect to whether these borderline categories are included or not in the total number of unemployed (Brown et al., 2006).

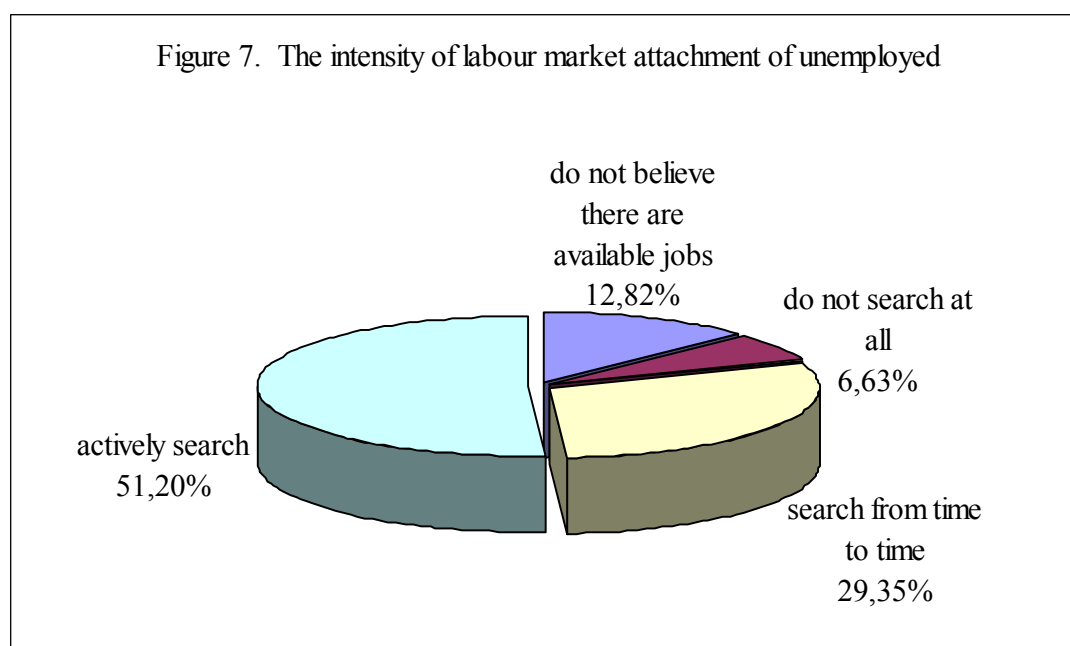
The population out of the labour force is a composite aggregate, which can be further divided in relation to the degree of labour market attachment. According to Brandolini et al. (2004) at least three sub-groups can be identified:

- Job seekers whose last search action occurred more than four weeks before the interview. These persons and the unemployed differ only as to the time passed after the last action. We call them ‘potential labour force’ to emphasise their similarity to the unemployed.
- Individuals who are not searching for a job, but who would be willing to start one if offered. They are typically called ‘discouraged workers’.
- People neither searching nor willing to work. This group of inactive population is referred to as ‘unattached’ or ‘non-attached’ to the labour market.

Hence, within the out of the labour force state we can distinguish marginally attached and non-attached. Marginal attachment to the labour force is defined as having expressed desire for work, although not currently searching. The marginally attached workers are viewed as distinct labour market state lying between the non-attached and the unemployed (Jones and Riddell, 1998). Furthermore, Kingdon and Knight (2000) provide two different interpretations of the lack of job-search among the persons claiming to be unemployed. One is called ‘taste for unemployment’ hypothesis, whereas the other is ‘discouraged worker’ hypothesis. According to the taste for unemployment hypothesis, given the possibility of redistribution within the household, higher household income may lower search effort among its unemployed members. Under this interpretation, it might be justifiable to exclude non-searching persons from the count of the unemployed. On the other hand, the alternative interpretation states that at high unemployment rates, unemployed persons may stop actively searching for work because they are discouraged by the high prevailing rate of unemployment or the long duration of their own unemployment. In this case, it may be misleading to use the job-search criterion for identifying the unemployed.

Some authors argue that ‘discouraged worker effect’ is particularly evident during recessions, when participation rate is expected to decrease due to the decreased likelihood of finding employment. This is opposed to the ‘additional worker theory’ arguing that, due to the higher unemployment probability of the breadwinner, other family members will enter the labour force to supplement family income and thereby increase labour force participation. A number of empirical studies found that discouraged worker effect dominates the number of added workers in periods of recession, thus considering the ‘discouraged worker effect’ as a stylised fact (Elliott and Dockery, 2006).

Among other questions the respondents in our survey were asked about the intensity of their search efforts with possibility to chose among four alternative answers: (i) Do not believe there are available jobs, (ii) Do not search for job at all, (iii) Search for job temporarily (from time to time), and (iv) Search for job actively. The first category comprises discouraged workers since the lack of search effort in this case is related to the labour market situation, such as the belief that no suitable job is presently available in the area. The second category consists of workers who do not search for job at all and may be related to personal factors, such as the belief that they lack qualifications or that employers think they are not suitable. The remaining two categories comprise unemployed who search for job with various degree of search intensity. The intensity of labour market attachment among registered unemployed workers in Macedonia is shown in Figure 7.



From Figure 7 it is evident that the share of discouraged workers among registered unemployed who do not believe there are available jobs is 12.82%, whereas 6.63% of unemployed do not search for other reasons. These two figures together represent almost 20% of the unemployed who can be considered as completely detached from the labour market. Among those who are attached to the labour market 29.35% search from time to time, whereas more than half of the surveyed unemployed search for job actively.

In order to assess the factors that influence the labour market attachment in Macedonia furthermore we estimate a Logit model, where the dependent variable takes value zero if the person does not believe there are available jobs or does not look for job. In the opposite case where the unemployed worker searches either temporarily or actively, the dependent variable takes value one. We divide the possible determinants in four groups: Personal traits, household characteristics, services from the ESA and the alternative labour market adjustment mechanisms. The results from the estimated Logit model are presented in Table 4.

Table 4. Estimated Logit model for the labour market attachment of unemployed

Variable	Coefficient	Standard error	t-value
Intercept	-0.92134512	1.291117889	-0.7136026
Personal traits			
Male	0.23674384	0.202844613	1.1671192
Age	0.12449139	0.068295646	1.8228306*
Age square	-0.00211957	0.000843396	-2.5131406**
Married	0.13486571	0.274072143	0.4920811
Urban	0.44122122	0.227605881	1.9385317**
Higher education	0.05061647	0.232138312	0.2180444
Long-term unemployed	0.21236807	0.275762695	0.7701117
Household characteristics			
Total number of members	-0.15409129	0.121038879	-1.2730727
No. of members at working age	0.09939261	0.120960592	0.8216942
No. of employed members	0.23259536	0.141153014	1.6478243*
Another unemployed member	0.03240561	0.123694851	0.2619803
Services from the ESA			
Health insurance beneficiary	0.37146851	0.219389679	1.6931905*
Unemployment benefit	-0.47364523	0.354308486	-1.3368159
Participation in active programmes	-0.10655798	0.318854790	-0.3341897
Alternative adjustment mechanisms			
Have retired member(s)	-0.24757945	0.227186241	-1.0897643
Social assistance beneficiary	-0.50800039	0.300325746	-1.6914980*
Have emigrated member(s)	-0.15643059	0.282927205	-0.5529005
Intention to emigrate	0.41969654	0.206383782	2.0335732**
Informal economic activities	0.19935299	0.210387109	0.9475533

Note: *, ** and *** represent statistical significance at the 10%, 5% and 1% levels respectively.

According to the obtained results, among the personal traits of the unemployed worker, the age and place of living appear to be statistically significant determinants of job search. In this context, for any additional year, an unemployed worker is 13.3% more likely to look for job. Moreover, the coefficient of the squared age is negative and statistically significant which means that the distribution of the search effort throughout the working life has convex form. With respect to the place of living, we can conclude that those living in urban areas are on average 55.5% more likely to search for job compared to those who live in rural areas. This situation can be attributed to the disproportional difference in employment opportunities between urban and rural areas. We assume that job creation is greater in cities, which may induce urban unemployed to look for job, though leading to higher discouragement among unemployed workers in rural areas.

Considering the household characteristics, only the number of employed household members significantly influences the search efforts. An additional employed member in the household on average will increase the probability for job search about 26.2%. These results are somewhat expected since an increase of employed members in the household is often associated with decrease of the number of dependants, which in turn makes room for an unemployed member to devote more time on job search.

With respect to the labour market policies, only provided health insurance appears to have positive impact on the intensity of job search, whereas participation in the active programmes and unemployment benefits are not statistically significant determinants. In this context, an unemployed worker with provided health insurance is about 45% more likely to look for job opposed to those who do not receive health insurance.

Finally, according to our estimated model we find out that intention to emigrate and social assistance are particularly significant determinants of the job search efforts in Macedonia. In this context, those who receive social assistance are about 39.8% less likely, while those who have intention to emigrate are about 52.1% more likely to look for job. Therefore, we conclude that social assistance represents a disincentive for job search efforts, while the intention to emigrate leads to strengthened search effort. The signs of the remaining coefficients are consistent with the assumptions, though without manifesting statistically significant impact on the labour market attachment.

4.2 The inactivity and the role of social transfers

As already stressed, the sharp fall in output at the beginning of transition was partly absorbed via increased unemployment and partly via increased non-participation, each of which exerting specific effects on the functioning of labour markets. Thus, the phenomenon of inactivity can be identified as a particular type of labour market adjustment mechanism, which has emerged alongside other adjustments such as informal employment and emigration. However, due to the effect of ‘discouraged workers’ observed among the long-term unemployed, the distinction between unemployment and non-participation in depressed labour markets becomes blurred.

Nowadays, the rate of labour force participation in Macedonia is comparable to other countries in the region, although it is still low by the standards of developed market economies (World Bank, 2003). Moreover, the Macedonian labour market shares with other transition countries a number of common points regarding the trends and characteristics of inactivity. First, women are more inclined to be non-participants than men. Second, the youngest and the oldest groups of workers face the highest probability of being non-participant. Third, the rates of non-participation decrease with the level of education: workers with lower levels of education face a higher probability of becoming non-participants compared to those with higher educational attainment (Nikoloski, 2009).

We consider the inactivity as mechanism of labour market adjustment since it provides additional income for the households through various types of social transfers. Moreover, we assume that in Macedonian society dominates the traditional system of values that promote egalitarianism, distributional justice and solidarity. In this context, the interhousehold transfers might play important role in maintaining the wellbeing of the households. Namely, in deprived households with one or more unemployed members the income from various sources can be distributed to all members of the household in order to satisfy their basic needs. With respect to this, in our empirical analysis we particularly pay attention to the pensions and social assistance.

The rising expenditures on pensions alongside other social transfers have been considered as a part of a broader national social strategy for poverty alleviation (World Bank, 2005). In this context, the World Bank estimates show that over half of the

population benefits from at least one social protection transfer including pensions. Therefore, pensions are important not only because they mitigate old-age poverty, but also support other family members especially among the poor.

Regarding the use of pension, we revealed that 28.5% of the surveyed unemployed have retired close relatives in their household of whom about 80% have one, whereas 20% have two retired members. Moreover, 79% of the respondents confirmed that their retired close relatives participate in covering the costs of living in the household. The average amount of pensions in the sample is 7138 denars (about 120 euros) which represents 25% of the total income for this category of households. On the other hand, we found that only 8.65% of the respondents or another member of their households receive social assistance from the government. The average amount of the social assistance is 2758 denars (about 45 euros), which represents 12.7% of the total income for this category of households.

4.3 The role of employment in the informal sector

Having in mind the multitude of different approaches, defining the informal economy is not a simple task. There are various terms that are used in order to denote the informal sector such as: informal, hidden, underground, parallel, black, unofficial, unrecorded, shadow, grey, dual, and so forth. Despite existing nuances in the meaning of the above terms, we will assume that more or less they concern the same issue.² However, in this analysis, for convenience we adopt the term 'informal' as the most appropriate and frequently used in the case of transition economies, because it indicates its specific nature in providing employment and alleviating poverty (Falcetti et al., 2003).

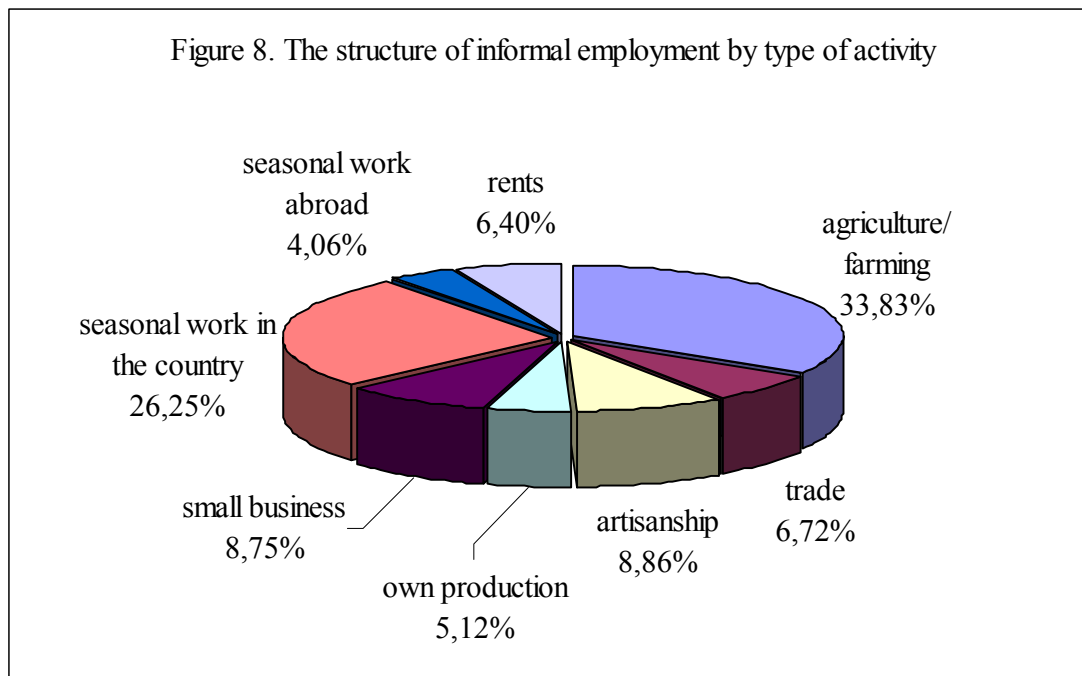
Generally, as summarised by Fleming et al. (2000), there are two distinct approaches to the formulation of the informal sector. The first is called 'definitional' and considers the informal economy as unrecorded economic activity. The second approach, called 'behavioural', considers the informal economy as an explicit change in the behaviour of economic agents in response to institutional constraints. According to the most commonly used definition, the informal economy encompasses all unregistered economic activities that contribute to officially calculated or observed Gross National Product (Schneider, 2005).

Research on the informal economy has identified a number of factors that influence the size and structure of the informal sector. As summarised by Schneider and Enste (2000), the main cause of a flourishing informal economy is the burden of tax and social security contributions, intensity of regulation, and the disincentive effects of social transfers. All these factors create a tax wedge, which consists of the difference between the total cost of labour and after tax earnings. The greater the difference, the higher the incentives will be to operate in the informal sector. Moreover, in developing and transition countries there exist peculiar factors that can cause a large informal economy such as poverty and social exclusion. In these countries, due to the low level of wages

² For example, Eilat and Zinnes (2000) point out that term 'informal' tends to refer to artisanal and small-scale activities, 'hidden' and 'underground' are associated with tax evasion, 'parallel' and 'black' seem to be associated with currency dealing, whereas 'unofficial' and 'unrecorded' mostly refer to economic activities that escape national statistics.

and social protection such as unemployment benefits and pensions, informal and household production can arise as potential survival strategies for marginalised and socially excluded segments (Bernabe, 2002). Besides this, the informal sector can be viewed as an opportunity for undertaking various forms of entrepreneurial activities (Bureau and Fendt, 2011; Williams and Nadin, 2010).

In our empirical analysis 38.3% of the surveyed unemployed workers declared that they earn income from various types of additional activities that are informal by nature, while half of them declared that other household members also perform such types of activities. With respect to this, we argue that in depressed labour markets which lack job creation in the formal sector, informal employment helps people to enter the workforce by offering an alternative to unemployment or inactivity and, prevents a further decline in living standards. The structure of employment by type of informal activity is shown in Figure 8.



From Figure 8 it is evident that the majority of the unemployed workers are engaged in subsistence activities such as agriculture, farming and seasonal work in the country that together represent about 60%. On the other hand, the entrepreneurial activities such as running own business, artisanship or own production and trade are represented to lesser extent. Therefore, we can conclude that most of the unemployed workers that operate in the informal sector are usually low skilled or unskilled and perform labour-intensive operations. The above argument is in line with the sectoral reallocation in Macedonia during transition, according to which the share of employment in subsistence agriculture demonstrated a significant rise. Nevertheless, this should not be a general conclusion for the productivity in the informal sector, since in this case we do not include the informal activities performed as a second job by those who are otherwise formally employed.

The income gained from informal activities for these households on average is 34.2% of their total household incomes, which represents significant financial contribution. However, expressed in absolute terms the average monthly income from informal activities is moderate since one third of the respondents declared to earn less than 100 euros and another third declared between 100 and 200 euros. As a consequence we can argue that unemployed workers are primarily involved in informal businesses that usually operate on a small-scale basis either in the form of self-employment or as micro or small enterprises.

In order to assess the factors that influence the engagement in informal economic activities among registered unemployed in Macedonia furthermore we estimate a Logit model, where the dependent variable takes value zero if the person declared that does not earn income from additional activities in the informal sector. In the opposite case where the unemployed worker declared that he/she undertakes such activities and therefore earns income from such activities, the dependent variable takes value one. Similarly, as in the case of the labour market attachment, we divide the possible determinants in four groups: Personal traits, household characteristics, services from the ESA and the alternative labour market adjustment mechanisms. The results from the estimated Logit model are presented in Table 5.

Table 5. Estimated Logit model for the engagement in informal economic activities

Variable	Coefficient	Standard error	t-value
Intercept	-3.83656121	1.048259642	-3.6599341***
Personal traits			
Male	0.44027145	0.157199587	2.8007163***
Age	0.18724694	0.055203318	3.3919510***
Age square	-0.00215023	0.000692251	-3.1061488***
Married	-0.39042368	0.211007035	-1.8502875*
Urban	-0.53108610	0.185382028	-2.8648198***
Higher education	-0.28353768	0.175016155	-1.6200658
Long-term unemployed	0.19473356	0.215653024	0.9029948
Household characteristics			
Total number of members	0.07532947	0.099775948	0.7549863
No. of members at working age	0.14609520	0.098846541	1.4780002
No. of employed members	-0.50646751	0.110170607	-4.5971201***
Another unemployed member	-0.24629609	0.101664232	-2.4226426***
Services from the ESA			
Health insurance beneficiary	-0.08598060	0.173575366	-0.4953503
Unemployment benefit	-0.18627391	0.318705175	-0.5844709
Participation in active programmes	0.10994240	0.248281749	0.4428131
Alternative adjustment mechanisms			
Have retired member(s)	0.03634987	0.184831926	0.1966645
Social assistance beneficiary	0.47836112	0.266035092	1.7981129*
Have emigrated member(s)	0.29336540	0.231996279	1.2645263
Intention to emigrate	0.04891157	0.169069235	0.2892991
Search for job	0.23147761	0.210384446	1.1002601

Note: *, ** and *** represent statistical significance at the 10%, 5% and 1% levels respectively.

According to the obtained results, we notice that most of the personal traits of the unemployed workers are statistically significant determinants of the employment in the informal sector. In this context, male unemployed are about 55.3% more likely to engage in informal activities than female. Married unemployed are about 32.3% less likely to perform various forms of informal employment activities, whereas those who live in urban areas are 41.2% less likely to engage in informal employment compared to those who live in rural areas. The coefficient of the age variable is positive and statistically significant, meaning that among informally employed more experienced workers prevail.

Considering the household characteristics, the number of employed members and having another unemployed member in the household significantly influence the respondents' decision to undertake informal economic activities. Hence, an unemployed worker on average will be 39.7% less likely to engage in informal employment for any additional employed member in the household. On the other hand, having an additional unemployed member in the household on average will decrease the probability for undertaking informal economic activities for about 21.8%. These results are somewhat expected since an increase of employed members in the household is often associated with increase of the income, which in turn renders the employment in the informal sector to be less attractive.

With respect to the labour market policies, we have considered the health insurance, unemployment benefit and participation in active labour market programmes. The signs of the estimated coefficients confirm the theoretical assumptions that passive labour market policies create disincentive effects, whereas the participation in active programmes goes hand in hand with the employment in the informal sector. However, we have not found statistically significant effect of those policies upon the engagement in the informal employment.

Finally, according to our estimated model we find out that among the alternative adjustment mechanisms only social assistance beneficiaries are significantly more likely to undertake informal economic activities. In fact, this category of unemployed are the most deprived on the labour market and, consequently they are about 61.3% more likely to engage in the informal employment as an alternative source of income for their households.

Having in mind the sensitivity of this issue, we should be aware about the possibility that respondents are reluctant to provide honest answers. However, the additional questions about the use of the free time show that unemployed workers who reported being engaged in informal economic activities have less free time opposed to those who reported that do not engage.

4.4 The role of emigration and remittances

Alongside employment in the informal sector and increased inactivity, emigration has become a prominent way to escape unemployment in a number of transition countries. In this section we bring to the fore the role of emigration from Macedonia as a labour market adjustment mechanism and its consequences for domestic labour market performance. Migration is simply defined as an act of changing location from one place to another and can be classified from different aspects. In our analysis we are interested

in international migration that from the point of view of migration duration can be distinguished between temporary and permanent migration.

Different theories offer explanation of the determinants of migration flows. According to the neo-classical theory, migrations arise as a result of wage differentials between regions or countries. Thus, one can expect, in a world of no regulation of migration, that a large real wage difference would cause intense migratory flows (Bauer and Zimmermann, 1999). By contrast, Keynesian economic theory considers migration movements as a form of equilibrium adjusting mechanism in labour markets. In other words, the determinants of migration movements are more likely to be unemployment differences rather than wage differences. Consequently, in terms of net migration flows, relatively high unemployment has a negative effect on net migration flows into labour importing countries, but a positive effect on net migration flows from labour exporting countries (Jennissen, 2003). Besides this, a high level of poverty in the country of origin can be considered as another 'push' economic factor of migration. The network effect, consisting of established social ties among the immigrants in a given country, can also contribute to easier integration, which fosters further migration movements (Bauer et al., 2000).

Taking into account the nature of international migratory movements, they have significant consequences for the socio-economic development of both the source and destination countries. The two most frequently cited effects of emigration on the source country, are the release of labour market pressure and improvement in financial flows via remittances (McCormick and Wahba, 2000). According to the first mechanism, emigration from less developed countries should lower the unemployment rate by reducing the labour supply. However, if emigration mostly occurs among workers with a specific profile and there is low substitution between workers in different labour market segments, then the expected beneficial effect via diminishing unemployment will only be in this particular segment, with unemployment in other labour market segments remaining largely unchanged.

On the other hand, a possible beneficial effect of emigration is exerted via remittances defined as financial flows arising from the cross-border movement of workers. Although emigration and remittances are interrelated, they are determined by different factors. The economic theory that covers this issue provides different views about the microeconomic motivations to remit, as well as the possible macroeconomic consequences of the remittances. At the macro-level, we can generally distinguish between two opposing effects of remittances on domestic labour market performance, with some authors differentiating between 'productive' and 'unproductive' use of remittances (Drinkwater et al., 2003). According to the negative view on remittances, they are mostly used for consumption purposes thus exerting a negative income effect on labour market participation of the remaining family members in the destination country. Alternatively, remittances can be used for investment purposes in order to overcome credit constraints faced by the firms in the home country. In this case, we expect remittances to play a positive role in the economic development of the sending country and a better performance of the domestic labour market viewed in terms of reduced unemployment.

In our empirical analysis we found that 27,7% of the surveyed unemployed workers would emigrate permanently if they had the possibility, whereas 33,9% have intentions to work abroad temporarily. However, about 46% of those who declared having intentions to emigrate undertake concrete activities to find work abroad, while the remaining 54% do not undertake such activities. On the other hand, 11,7% of the respondents stated they have close relatives who are currently emigrated from the country two thirds of who receive financial aid for covering their costs of living. The share of remittances for this category of households in their total income is about 28,2%, which represents a considerable proportion.

In order to assess the factors that influence the intention to emigrate among registered unemployed in Macedonia we furthermore estimate a Logit model, where the dependent variable takes value zero in the case where the person declared that if he/she had the possibility would not work abroad. In the opposite case where the unemployed worker declared that he/she has intention to emigrate, the dependent variable takes value one. Similarly, as in the previous cases, we divide the possible determinants in four groups: Personal traits, household characteristics, services from the ESA and the alternative labour market adjustment mechanisms. The results from the estimated Logit model are presented in Table 6.

Table 6. Estimated Logit model for the intention to emigrate

Variable	Coefficient	Standard error	t-value
Intercept	0.01022456	1.074430522	0.00951626
Personal traits			
Male	0.51717242	0.161669389	3.19895079***
Age	0.02727396	0.057498978	0.47433829
Age square	-0.00086351	0.000718619	-1.20163335
Married	-0.39709869	0.216117732	-1.83741837*
Urban	0.48771713	0.192063888	2.53934844**
Higher education	-0.37695749	0.180539220	-2.08795351**
Long-term unemployed	0.25058899	0.216572163	1.15706926
Household characteristics			
Total number of members	-0.03037398	0.101843651	-0.29824132
No. of members at working age	0.02646650	0.100838729	0.26246363
No. of employed members	-0.11271859	0.109172200	-1.03248436
Another unemployed member	0.22336383	0.103328144	2.16169405**
Services from the ESA			
Health insurance beneficiary	-0.15222622	0.179868547	-0.84631932
Unemployment benefit	0.48852835	0.331708990	1.47276188
Participation in active programmes	-0.09029175	0.256375786	-0.35218518
Alternative adjustment mechanisms			
Have retired member(s)	-0.16742191	0.189136926	-0.88518895
Social assistance beneficiary	-0.40220066	0.267891371	-1.50135731
Have emigrated member(s)	0.37321365	0.245804834	1.51833327
Search for job	0.41645584	0.206457614	2.01714934**
Informal economic activities	0.06056577	0.169180204	0.35799563

Note: *, ** and *** represent statistical significance at the 10%, 5% and 1% levels respectively.

Among the personal traits, the statistically significant determinants of the intention to emigrate are the gender, marital status, the level of education and the place of living of the respondents. In this context, male unemployed are 67.7% more likely to emigrate compared to female unemployed workers, those who are married are about 32.8% less likely to emigrate, those who have higher education are about 31.4% less likely to emigrate and finally, those who live in urban areas demonstrate about 62.9% higher intention to emigrate compared to those living in rural areas.

With respect to the household characteristics, having another unemployed member significantly influences the intention to emigrate. Namely, an additional unemployed worker would increase the intention to emigrate for 25%. On the other hand, the provision of services from the ESA does not seem to have significant impact on the intention to emigrate. Finally, the unemployed who search for job have about 51.7% higher probability to demonstrate intentions to emigrate compared to those who do not search for job.

The signs of the remaining coefficients are consistent with the assumptions of the model, though without having statistically significant impact on the intention to emigrate. For instance, having retired member in the household or being social assistance beneficiary negatively influences the intention to emigrate, whereas having emigrated close relative(s) or being engaged in informal employment increases the intention to emigrate.

5. Conclusions and policy recommendations

In this paper we have analysed the changes in the Macedonian labour market due to the recent recession and the role of the alternative labour market adjustment mechanisms. 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 recessionary 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 the growth rate in Macedonia has been much greater during the period before recession. The later start of recession and the 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 cushioning the social and economic consequences of the high and persistent unemployment rate. In this context, we have carried out a survey in order to empirically assess the extent to which these adjustment mechanisms absorb a part of the unemployed workforce and/or contribute to their household income.

With respect to the labour market attachment we found that about one fifth of the unemployed do not search for job either because they do not believe there are available

jobs or for other personal reasons. Besides the personal traits and household characteristics that may influence the search effort of an unemployed worker, we revealed that alternative labour market adjustment mechanisms such as intention to emigrate significantly increase the search incentives. On the other hand, social assistance appeared to have significant disincentive effect on the job search efforts. Regarding the role of the social transfers, we revealed that pensions of the retired members in the households represent particularly significant contribution in the total household income. On the other hand, the relative share of the social assistance is more modest. In this context, we argue that the social transfers are important not only for the beneficiaries themselves, but also for other members in the households via inter-household transfers.

Considering the employment in the informal sector we found that considerable number of unemployed workers are engaged in various forms of informal employment. Furthermore, we revealed that income earned from additional informal activities represents more than one third of the total household income. Hence, employment in the informal sector alongside other forms of labour market adjustment significantly contributes to the wellbeing of the unemployed workers. However, most of the informal arrangements of the unemployed workers are low-productivity and small-scale predominantly in the agricultural and farming sector. With respect to the determinants of the employment in the informal sector we revealed that male, mature and those who live in rural areas are more inclined toward the informal sector. On the other hand, those who receive social assistance, and therefore represent the poorest and the most marginalised segment of the population are significantly more involved in the informal arrangements.

With respect to emigration we found that more than half of unemployed workers if they have the possibility will emigrate either permanently or temporarily. Moreover, we revealed that only small proportion of unemployed have emigrated close relatives, but they heavily rely on the remittances that receive from them. Therefore, remittances alongside other forms of labour market adjustment significantly contribute to the wellbeing of the unemployed workers. Regarding the determinants of the intention to emigrate we revealed that male, urban workers and those who search for job manifest considerably higher intention to emigrate. In contrast, those who are married manifest lower intention to emigrate.

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. In this context, the labour market segmentation might have serious negative implications on the labour market functioning that have to be set off by using appropriate policy measures. 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 stability

```

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( 12)= 111.0983[.000]*F( 12, 17)= 9.2582[.000]*
*
* F:Chow Test *CHSQ( 2)= 123.9660[.000]*F( 2, 27)= 61.9830[.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. Questionnaire design

Interviewer (name and surname): _____

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Address: _____

Telephone number: _____ e-mail: _____

The aim of this survey is to assess the unemployment conditions in Macedonia and to offer possible solutions for alleviation of the consequences of unemployment.

This research is carried out within the project “The role of the alternative labour market adjustment mechanisms in Macedonia during the economic crisis” funded by wiiw and GDN - SEE&CIS research competition 2011: “Crisis Effects: Growth Prospects, Social and Policy Responses in SEE and CIS”

The subject of interviewing are unemployed persons who register at the Employment state agency in Macedonia. The survey is anonymous and data will not be used for activities that would compromise the interviewees.

1. Gender

- a) male
- b) female

2. Age _____ (years)

3. Marital status

- a) single
- b) married
- c) divorced
- d) widowed

4. Place of living

- a) town
- b) village

5. Ethnicity

- a) Macedonian
- b) Albanian
- c) Turk
- d) Roma
- e) Serbian
- f) Vlahos
- g) Bosnian
- h) Other

6. Education

- a) unqualified
- b) semi-qualified or uncompleted secondary education
- c) qualified
- d) highly-qualified

- e) secondary vocational education
- f) higher education (two years)
- g) higher education (four years and more)
- h) master
- i) PhD

7. Duration of unemployment

- a) less than 1 month
- b) from 1 to 5 months
- c) from 6 to 11 months
- d) from 12 to 17 months
- e) from 18 to 23 months
- f) from 2 to 3 years
- g) from 3 to 4 years
- h) from 4 to 5 years
- i) from 5 to 7 years
- j) 8 years and more

8. What is the filling of being unemployed? (only key words or one sentence)

9. Does the unemployment for you causes stressing situations or other health problems?

- a) does not cause
- b) causes to less extent
- c) causes to great extent

10. According to you, who is the most responsible for the high unemployment rate in Macedonia? (possible multiple choice)

- a) the Macedonian Government
- b) the local government
- c) Employment state agency
- d) business community
- e) trade unions
- f) international community

11. According to you, who is the most important factor for solving the unemployment problem in Macedonia? (possible multiple choice)

- a) the Macedonian Government
- b) the local government
- c) the Employment state agency
- d) business community
- e) trade unions
- f) international community
- g) myself

12. According to you, does the membership in political parties influences the employment process in Macedonia?

- a) does not influence at all
- b) does not influence

- c) do not have opinion
- d) influence to less extent
- e) influence to great extent

13. What do you intend to undertake in future in order to get employed (only key words or one sentence)

14. How do you see yourself after five years?

- a) yet unemployed
- b) employed
- c) do not know
- d) engaged in additional activities
- e) employed abroad
- f) retired

15. If you have possibility, would you work abroad?

- a) no (go to question 17)
- b) yes, temporarily
- c) yes, permanently

16. Do you undertake concrete activities to find work abroad?

- a) yes
- b) no

17. Do you think that Macedonia is going to right direction?

- a) does not go to right direction
- b) do not have opinion
- c) goes to right direction

18. According to you, has the global economic crisis negatively influenced the living standard of your household?

- a) has not influenced at all
- b) has not influenced
- c) do not have opinion
- d) has influenced to less extent
- e) has influenced to great extent

19. Has the global economic crisis induced you to search for additional sources of income for your household?

- a) has not induced at all
- b) has not induced
- c) do not have opinion
- d) has induced to less extent
- e) has induced to great extent

20. Do you think that such kind of research may help in alleviation of the unemployment problem?

- a) may not help at all
- b) may not help
- c) do not have opinion

- d) may help to less extent
- e) may help to great extent

21. Do you have health insurance from the Public Employment Agency?

- a) yes
- b) no

22. Do you receive unemployment benefit from the Public Employment Agency?

- a) yes
- b) no (go to question 25)

23. On what basis you receive unemployment benefit?

- a) Liquidation
- b) Seasonal workers
- c) Redundancy from work
- d) Redundancy – state insolvent companies
- e) Redundancy from state and public administration

24. What is the amount of your unemployment benefit?

- a) up to 1.000 denars
- b) from 1.000 to 2.000 denars
- c) from 2.000 to 3.000 denars
- d) from 3.000 to 4.000 denars
- e) from 4.000 to 5.000 denars
- f) from 5.000 to 6.000 denars
- g) from 6.000 to 7.000 denars
- h) more than 7.000 denars

25. Have you been participated in some of the active programs/measures of the Public Employment Agency?

- a) yes
- b) no (go to question 28)

26. In which of the following active programs/measures you have been participated?

- a) Employment clubs
- b) Apprenticeship program
- c) Program for self-employment
- d) Employment subsidy
- e) Employment of disabled persons
- f) Free training for IT skills
- g) Program for supporting formalization of the existing businesses
- h) Support for additional employment in companies
- i) Pilot program – mobility of the workforce
- j) Program for employment preparation through training
- k) Survey of vacancies
- l) Program for supporting Roma minority
- m) Economic support for women – victims of the family violence

27. Has the attended program helped you to find a job (in the formal sector)?

- a) yes
- b) no

- 28. What is the total number of members in your household?** _____
- 29. How many members of your household are at working age? (15-79)** _____
- 30. How many members of your household are employed ?** _____
- 31. How much is the total income from salaries in your household?**
- a) up to 5.000 denars
 - b) from 5.000 to 10.000 denars
 - c) from 10.000 to 15.000 denars
 - d) from 15.000 to 20.000 denars
 - e) from 20.000 to 30.000 denars
 - f) from 30.000 to 40.000 denars
 - g) from 40.000 to 50.000 denars
 - h) more than 50.000 denars
- 32. Do you personally earn income from additional activities?**
- a) yes
 - b) no (go to question 36)
- 33. From what kind of activities you earn additional income? (possible multiple choice)**
- a) agriculture/farming
 - b) trade
 - c) artisanship
 - d) own production
 - e) small business
 - f) seasonal work in the country
 - g) seasonal work abroad
 - h) rents
- 34. How much do you earn monthly from these additional activities?**
- a) up to 5.000 denars
 - b) from 5.000 to 10.000 denars
 - c) from 10.000 to 15.000 denars
 - d) from 15.000 to 20.000 denars
 - e) from 20.000 to 30.000 denars
 - f) from 30.000 to 40.000 denars
 - g) from 40.000 to 50.000 denars
 - h) more than 50.000 denars
- 35. Does another unemployed member of your household perform some of the above mentioned activities?**
- a) yes
 - b) no
- 36. Is there another member of your household who is registered with the Public Employment Agency?**
- a) yes
 - b) no (go to question 40)
- 37. Indicate the number of persons** _____

38. Dose someone of them receive unemployment benefit?

- a) yes
- b) no (go to question 39)

39. What is the amount of his unemployment benefit?

- a) up to 1.000 denars
- b) from 1.000 to 2.000 denars
- c) from 2.000 to 3.000 denars
- d) from 3.000 to 4.000 denars
- e) from 4.000 to 5.000 denars
- f) from 5.000 to 6.000 denars
- g) from 6.000 to 7.000 denars
- h) more than 7.000 denars

40. Are there retired person(s) in your household?

- a) yes
- b) no (go to question 44)

41. Indicate the number of retired persons _____

42. Do they participate (partly or fully) in covering your costs of living?

- a) yes
- b) no

43. What is the total monthly amount of their pensions? _____ (denars)

44. Do you or another member of your household receive social assistance?

- a) yes
- b) no (go to question 46)

45. What is the monthly amount of the social assistance? _____ (denars)

46. Is there any member (or several members) of your household (father, mother, brother, sister, son, daughter) who are currently emigrated from the country?

- a) yes
- b) no (go to question 50)

47. Indicate the number of emigrated persons _____

48. Do they participate (partly or fully) in covering your costs of living?

- a) yes
- b) no

49. What is the average monthly amount your emigrated relatives send to your household?

- a) up to 5.000 denars
- b) from 5.000 to 10.000 denars
- c) from 10.000 to 15.000 denars
- d) from 15.000 to 20.000 denars
- e) from 20.000 to 30.000 denars
- f) from 30.000 to 40.000 denars
- g) from 40.000 to 50.000 denars
- h) more than 50.000 denars

50. Do you actively search for job?

- a) do not believe there are available jobs
- b) do not search at all
- c) search from time to time
- d) actively search

51. How much of the time during a day you perform activities for providing additional income?

- a) less than 4 hours
- b) from 4 to 8 hours
- c) more than 8 hours

52. How much is your free time during a day?

- a) do not have free time
- b) have little free time
- c) have enough free time
- d) have plenty free time

53. How do you spent your free time? (possible multiple choice)

- a) watching TV
- b) attending cultural manifestation
- c) visiting relatives and friends
- d) sport and recreation
- e) hobby
- f) additional economic activity

References

- [1] Arpaia, A. and Curci, N. (2010) “EU Labour Market Behaviour during the Great Recession”, *European Commission Economic Papers*, 405.
- [2] Bauer, T. and Zimmermann, K. (1999) “Assessment of Possible Migration Pressure and its Labour Market Impact following EU Enlargement to Central and Eastern Europe”, Study for the UK Department of Education and Employment, IZA, Bonn and CEPR, London.
- [3] Bauer, T., Epstein, G. and Gang, I. (2000) “What are Migration Networks?”, *IZA Discussion Paper*, No.200.
- [4] Beaton, K. (2010) “Time Variation in Okun’s Law: A Canada and U.S. Comparison”, *Bank of Canada Working Paper*, 2010-7.
- [5] Becker, T. et al. (2010) “Whither growth in central and eastern Europe? Policy lessons for an integrated Europe”, Bruegel Blueprint and Vienna Institute for International Economic Studies, Vol.11.
- [6] Bernabe, S. (2002) “Informal Employment in Countries in Transition: A Conceptual Framework”, *Centre for Analysis of Social Exclusion working paper*, No.56.
- [7] Borbely, J. M. (2009) “U.S. Labor Market in 2008: Economy in Recession”, *Monthly Labor Review*, March.
- [8] Brandolini, A., Cipollone, P. and Viviano, E. (2004) “Does the ILO definition capture all unemployment?”, *Temi di discussione del Servizio Study, Banca d’Italia*, No.529.
- [9] Brown, J. et al. (2006) “Non-standard Forms and Measures of Employment and Unemployment in Transition: A Comparative Study of Estonia, Romania and Russia”, *IZA Discussion Paper*, No.1961.
- [10] Bureau, S. and Fendt, J. (2011) “Entrepreneurship in the informal economy: why it matters”, *The International Journal of Entrepreneurship and Innovation*, Vol.11, No.2, pp.85-94.
- [11] Clancy, G. (2009) “The Impact of the Recession on the Labour Market”, UK Office for National Statistics, May.
- [12] Drinkwater, S., Levine, P. and Lotti, E. (2003) “The Labour Market Effects of Remittances”, *Hamburg Institute of International Economics, FLOWENLA Discussion Paper* No.6.
- [13] Elliott, L. and Dockery, A. (2006) “Are the ‘Hidden Unemployed’ Unemployed?”, *The Centre for Labour Market Research*, Discussion Paper Series 06/2.
- [14] Elsby, M., Hobijn, B. and Sahin, A. (2010) “The Labor Market in the Great Recession”, Brookings Panel on Economic Activity, March.
- [15] Employment State Agency of the Republic of Macedonia (2011) “Annual report – 2010”.

- [16] Falcetti, E., Sanfey, P. and Taci, A. (2003) “Bridging the Gaps? Private Sector Development, Capital Flows and the Investment Climate in South-Eastern Europe”, *EBRD Working Paper*, No.80.
- [17] Gligorov, V. and Mojsavska, S. (2005) “Macedonia: Search for Stability without Growth”, *WIIW Current Analyses and Country Profiles*, The Vienna Institute for International Economic Studies.
- [18] Gronqvist, C. and Kinnunen, H. (2009) “Impact of Recession on Labour Supply: Experiences from the 1990s in Finland”, Bank of Finland Monetary Policy and Research, October.
- [19] Jennissen, R. (2003) “Economic Determinants of Net International Migration in Western Europe”, *European Journal of Population*, 19: 171-198.
- [20] Jones, S. and Riddell, C. (1998) “The Measurement of Unemployment: An Empirical Approach”, *Econometrica*, 67(1): 147-162.
- [21] Kingdon, G. and Knight, J. (2000) “Are Searching and Non-searching Unemployment Distinct States when Unemployment is High?”, *Centre for the Study of African Economies*, WPS/2000-2.
- [22] Knotek, E. (2007) “How Useful is Okun’s Law?”, *Federal Reserve Bank of Kansas City, Economic Review*, fourth quarter.
- [23] Knotek, E. and Terry, S. (2009) “How Will Unemployment Fare Following the Recession?”, *Federal Reserve Bank of Kansas City, Economic Review*, third quarter.
- [24] McCormick, B. and Wahba, J. (2000) “Overseas Employment and Remittances to a Dual Economy”, *The Economic Journal*, 110(463): 509-534.
- [25] Micevska, M. (2008) “The Labour Market in Macedonia: A Labour Demand Analysis”, *Labour*, 22(2), 345–368.
- [26] Nikoloski, D. (2004) “Some Aspects of the Problem of Unemployment in Macedonia”, *Economic Development*, Vol.6, No.1-2-3, pp.241-260.
- [27] Nikoloski, D. (2009) “The sustainable rate of unemployment in transition countries – A case study for Macedonia”, *VDM Verlag*.
- [28] Nikoloski, D. (2011) “Labour market segmentation in the Republic of Macedonia”, *Economics and Business*, Skopje, No.154 March.
- [29] OECD (2002) “*OECD Employment Outlook*”.
- [30] Schneider, F. (2005) “Shadow Economies of 145 Countries all over the World: What Do We Really Know?” *Centre for Research in Economics, Management and Arts, Discussion Paper*, No.13.
- [31] Schneider, F. and Enste, D. (2000) “Shadow Economy: Size, Causes and Consequences”, *Journal of Economics Literature*, 38(1): 77-114.
- [32] 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.

- [33] Tapp, S. (2009) “Canadian Labour Market Developments: Recession Impacts, Recent Trends and Future Outlook”, Office of the Parliamentary Budget Officer, July.
- [34] 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.
- [35] Verick, S. and Islam, I. (2010) “The Great Recession of 2008-2009: Causes, Consequences and Policy Response”, *IZA Discussion Paper* No.4934.
- [36] Williams, C. and Nadin, S. (2010) “Entrepreneurship and the informal economy: An overview”, *Journal of Developmental Entrepreneurship*, Vol.15, No.4, pp.361-378.
- [37] World Bank (2003): “FYR Macedonia Country Economic Memorandum-Tackling Unemployment”, Report No.26681-MK.
- [38] World Bank (2005): “FYR of Macedonia Poverty Assessment for 2002-2003”, *Poverty Reduction and Economic Management Unit, Europe and Central Asia Region*.