

National Bank of the Republic of Macedonia



Developments in major labour market indicators and active labour market measures in dealing with unemployment: Evidence from Macedonia¹

Aneta Krstevska

Maja Ilievska²

¹ The views expressed in this paper are those of the authors and do not necessarily represent the views of the National Bank of the Republic of Macedonia. The analysis in the Section on active labour market measures in Macedonia has been presented on the BIS Working Party on Monetary Policy, February 2018, Zagreb. The authors are grateful for useful comments by Biljana Davidovska Stojanova and Magdalena Petrovska, Monetary Policy and Research Department, NBRM.

² E-mails: krstevskaa@nbrm.mk and ilievskam@nbrm.mk.

Table of contents

1. Introduction.....	3
2. Developments in the main labour market indicators in Macedonia in the last decade.....	4
3. Trends and distribution of employment and wages by activities.....	14
4. Skills supply and demand mismatch by activities.....	25
5. An overview of the active labour market measures.....	32
6. Active labour market measures in Macedonia.....	34
7. Conclusions and policy recommendations.....	38
8. Literature.....	40

1. Introduction

The unemployment is one of the major concerns in the Macedonian economy, reflecting mainly transitional issues, as well as the overall macroeconomic environment and changing requirements for contemporary skills on the market as global phenomena. However, it is worth to note the gradual decreasing trend of the unemployment in the last years, despite the global crisis impacts, that is due to several factors, including active labour market (ALM) measures, measures against grey economy, job creation in the new companies with foreign capital as well as gradual economic recovery.

The unemployment creates significant macroeconomic consequences, therefore reducing the unemployment must be between top priorities of the Government policies. The unemployment is negatively reflected over households' disposable income and their spending ability which reduces the domestic demand and hamper the economic growth. In addition, the unemployment induces social impacts resulting with increase in the income inequality and poverty.

Performances of the corporate and the household sectors, particularly their financial potential, the level of income they generate and the level of indebtedness, have direct impact on the performances of financial institutions and the overall stability of the financial system. The favorable labour market developments experienced in the last decade, contributed to accelerating the growth of disposable income, therefore enabling additional financing to the employed population. The increase of indebtedness of particular categories of the working population also highlights the importance of positive labour market conditions in terms of attaining stable employment and regular monthly payment of stable and feasibly growing net wages.

There are strong efforts worldwide for strengthening policy and institutional capacity in dealing with the unemployment. In this regard, there is a strong orientation and support for ALM implementation considering their long term contribution on workers' skills and ability for job seeking, which is an important contribution relative to the passive labour market (PLM) measures which provide income support during the jobless time.

This paper presents the developments in the main labour market indicators in Macedonia and evaluates the level and movements in these indicators compared to the EU and selected European countries. The trends in employees' number and net wages by activities are also examined in this analysis. Another important issue that has been touched upon in this paper is the skills supply and demand mismatch by activities that has a favorable downward movement indicated by the declining trend in job vacancy rate almost in all activities in conditions of increase in the number of occupied posts in Macedonian economy and simultaneous decline in the number of job vacancies. This paper also provides a broad analysis on the implementation on the ALM measures in Macedonia, based on the available data and information from the administrative sources as well as comparison to the experiences in EU and other regions. Although it is still difficult to provide an evaluation of the impacts of the ALM measures in Macedonia, the general conclusion is that they have positive impacts on curbing down the unemployment, especially on the awareness of the unemployed people that they need to work on improving their skills as necessary precondition for providing a job. In addition, the analysis

points out areas where additional improvements in designing the ALM measures are needed in order to increase their effectiveness.

2. Developments in the main labour market indicators in Macedonia in the last decade

The labour supply is defined as part of the total working population in the country that has aspiration to work and is actively seeking for work and the most common indicator measuring labour supply is the activity rate³. In the Republic of Macedonia, as of 2005, there has been a trend of continuous slowdown of the activity rate, while in 2011 the activity rate started declining (with the exception of 2013 and 2014 when it increased). Changes in the activity rate could be explained by demographic factors (changes in the structure of the total working population as a result of non-economic factors such as process of "aging population") and by changes in population working preferences. In the Macedonian economy, the changes in the working i.e. non-working preferences of the population (changes in individual activity rates) are assessed as main driver of changes in the activity rate (Hotchkiss, 2009).

The slowdown in the movement in the activity rate during the period 2005-2011, was contributed by the older population (population aged 25-49 and 50-64), which coincided with the changes in legal framework on labour relations adopted in 2005 which enabled diversity in terms of the definition of employment⁴, as well as changes in the framework for collective bargaining. The slowdown in the activity rate growth in 2009 and 2010 and its decline starting from 2011 can be explained by the reduced participation of young people (15-24 years). In the literature this movement is commonly explained by the change in preference of young people in terms of continuing education rather than joining the workforce (Aaronson et al, 2006). The reasons behind this movement are explained later in the section elaborating the changes in young unemployment rate. Increased inclusion of young people in the education system results in slower growth or reduction in labour supply in the short run. However, in the long run such movements will translate into a better and highly qualified labour supply, employment growth and higher potential for economic growth. The positive trends in the activity rate during the period 2013-2014 are related to the growth in demand, which caused a simultaneous increase in the labour supply. These movements were associated with the operation of the new production facilities in the free economic zones, the domestic and foreign investment in the construction sector, as well as the fiscal stimulus in the form of publicly funded construction work, the agricultural subsidies and the active labour market measures⁵ that have been implemented for several years in a row. The increase in the activity rate during this period was result of the increased participation of the middle aged population (25-49 years) on the labour market. Although the implementation of these measures and programs continued in 2015 and

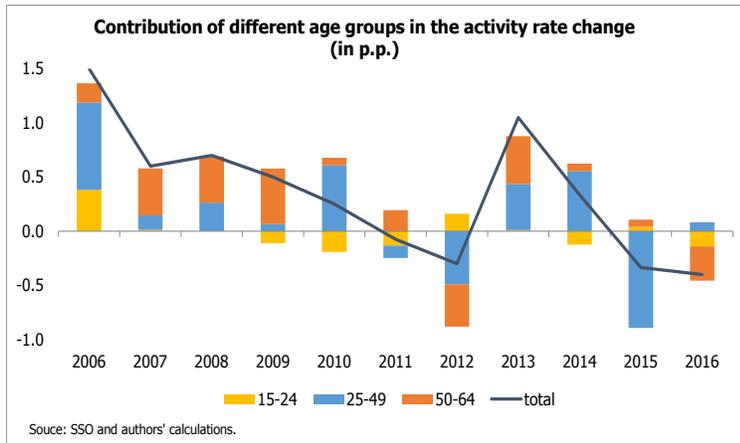
³ Activity rate represents active persons as a percentage of same age total population. For the purpose of this analysis the activity rate refers to the working age population aged 15-64 years. The economically active population (labour force) comprises employed and unemployed persons.

⁴ Part-time and full-time employment contracts, half-time employment contracts, legal definition of overtime etc.

⁵ During these years the Government of the Republic of Macedonia, through the Ministry of Labour and Social Affairs and the Employment Agency, conducted active measures and programs designed to increase employment, such as self-employment programs, financial support to micro and small enterprises for opening new jobs, subsidized employment programs, work-readiness programs, community service programs and many other measures. These measure are explained in Section 6.

2016⁶ and was additionally supported by the credit lines provided by the European Investment Bank for small and medium enterprises, the activity rate experienced a slight downward adjustment, which is related to this movement experience in the older population category and partly as a consequence of the reduced participation of the young population (NBRM, 2012).

Chart 1



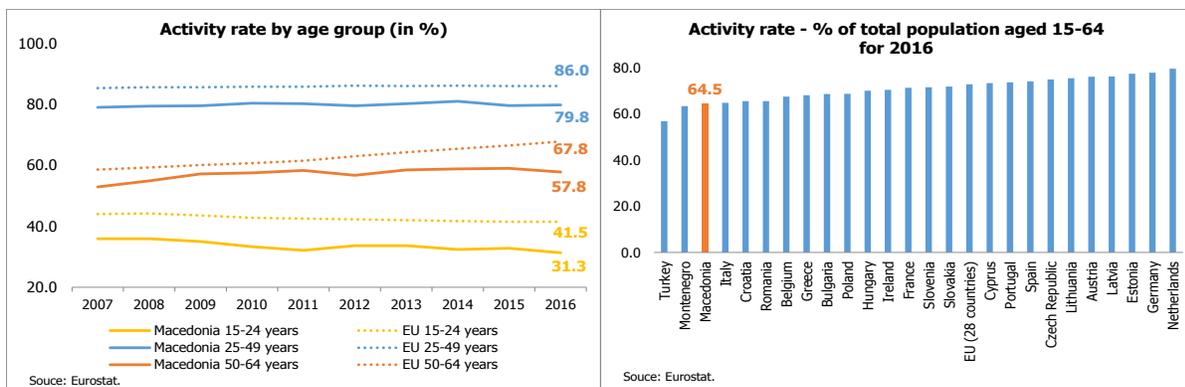
The activity rate in Macedonia has constantly been lagging behind the EU⁷, with the highest difference being registered in 2016. This discrepancy is due to the large difference observed in the age groups 15-24 years and 50-64 years (of more than 10 percentage points). The relatively low activity rate of the young population in Macedonia in contrast to the EU partly is related to the trend in the recent years of orientation towards obtaining a university degree in seeking for better job opportunities or migration outflows. With regards to the older population, the lower activity rate observed in Macedonia compared to the EU is considered as a consequence of early retirement or dismissal because of redundancy, pointing to the absence of life-long learning strategy or transition to the informal economy. The comparative analysis among selected European countries shows that besides Macedonian activity rate of 64.5% in 2016, the activity rate is lower also in Turkey (56.9%) and Montenegro (63.4%).

Chart 2

Chart 3

⁶ The implementation of the measures for increasing employment were expanded to include programs for self-employment by means of borrowing and self-employment by using grants, and were additionally extended to persons up to 29 years of age.

⁷ All the indicators referring to EU represent all the European Union 28 countries.



Since 2006, when it was 36%, the overall unemployment rate⁸ has been falling steadily, reaching the level of 23.7% at the end of 2016, which is a reduction by more than 10 percentage points in 10-years period. This trend coincides with the general improvements of the macroeconomic environment, the growth of economic activity and production (including the production of the new capacities in the technological-industrial development zones) and the continuous implementation and development of labour market programs and measures. All these factors had a positive impact in increasing the number of jobs and stimulating the demand for labour in the country (MLSP, 2013).

When analyzing the movement of the overall unemployment rate it is important to take into account the shifts that have occurred in different age groups in order to determine the contributions of each group to the changes in the aggregate level⁹. As it can be observed on Chart 4, in the last 10 years the middle aged population (25-49 years) has the highest contribution to the decline in the overall unemployment rate. This is due to the fact that this age group (as expected and as it is a rational trend in all countries) has dominant position in the total labour force, as well as in the unemployed segment of the economically active population. Nevertheless, the young population also noted a significant contribution for the observed favorable movement in the unemployment rate. The reduced share of young people in the total workforce and the declined rate of young unemployment are the main underlying factors for the high contribution of this age group (Corbanese, 2015). Moreover, the significant contribution of this age group for the downward trend of the overall unemployment rate was particularly high for the period until 2013 when the share of persons aged 15-24 in the total workforce in the Republic of Macedonia was reduced from 20.1% in 2006 to 17.7% in 2013, i.e. 2.4 percentage points, while the unemployment rate fell by 7.9 percentage points (i.e. from 59.8% in 2006 to 51.9% in 2013). The coincident downward movement in the activity and unemployment rate of the young population is considered as a consequence of their lower participation in the workforce during the mentioned period due to increased involvement in the higher level education process which was translated into postponed search for more prosperous and higher paid employment opportunities. In the period after 2013, the reduction in the unemployment rate was mainly caused by the older population which can be considered as result of the undertaken labour market measures (the unemployment rate was reduced to

⁸ Unemployment rate represents unemployed persons as a percentage of the active population.

⁹ The total unemployment rate (U_t) is equal to the weighted sum of the unemployment rates (u_i) in different age groups (i), with weights equal to the shares of each age group in the total labour force (w_i). $U_t = \sum_i w_i(i) * u_i(i)$. Hence, changes in the overall rate of unemployment result from the changes in shares and/or changes in unemployment rates of different age groups.

23.2% and 17.1% or by 4.5 and 6.1 percentage points for the period 2013-2016, for the population aged 25-49 and 50-64, respectively) (MF, 2017). However, in 2015, the decline in the unemployment rate (in relation to 2013) of the young population was twice higher compared to the other age groups¹⁰, demonstrating highest contribution of this part of the population in the downward movement of the overall unemployment rate. This movement is considered as a result of the implementation of the employment programs and measures aimed at persons up to 29 years (ILO, 2015a).

Chart 4

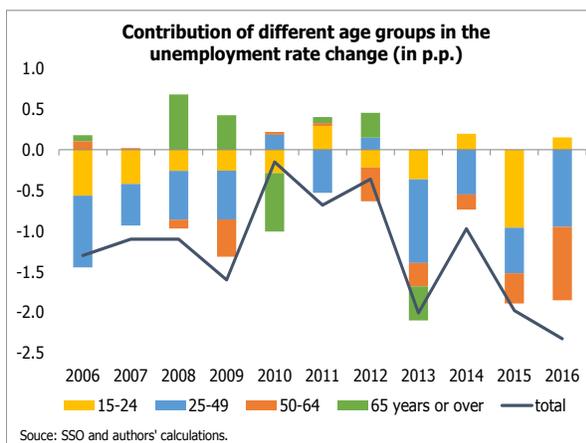
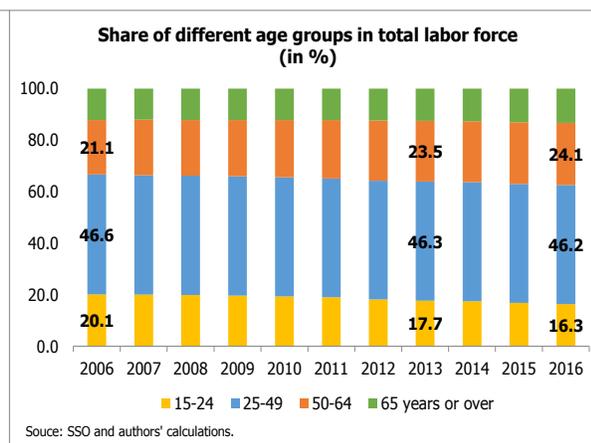


Chart 5



Generally speaking, between the main drivers of the unemployment reduction in the last years could be listed the following: jobs creation in the new companies with foreign capital, grey economy reduction as well as the implementation of the ALM measures. Regarding grey economy, it is worth to note that according to SSO, the share of the informally employed people in the total employed population has reduced from 22.5% in 2012 to 18.6% in 2016¹¹.

Taking into account our analysis on ALM measures and limited available information from other sources¹², roughly speaking, the contribution in unemployment reduction of the ALM measures in which the impact is directly measurable (including subsidies, loans) is estimated at around 35-45% (number of people covered by measures with direct impact on employment relative to reduction in the unemployed people in the same period). Behind this calculation is the

¹⁰ For the period 2015-2013, the unemployment rate for the age group 15-24 years was reduced for 4.6 percentage points (or from 51.9 to 47.4), while for the other age groups (25-49 and 50-64 years) the unemployment rate has declined by 2.4 percentage points.

¹¹ Reduction by 12.518 persons, based on the data from SSO, Labour Force Survey, available for the given period.

¹² Economic Reform Program of the Republic of Macedonia, 2016-18, p. 79: "As a result of the active labour market policies and measures, around 24.500 jobs were created in the period 2007-2015. The realization of the project "Macedonia employs" started in April 2015, providing favorable conditions for employment of unemployed persons facing difficulties in employment. So far 10.400 people are employed under this project. As of March 2014, 11.000 people are employed with the measure for employment of young people by exemption from paying social contributions. The policy for attracting foreign investment contributed to employment of over 16.000 people, out of which 6.650 are employed in 2015. By recently announced investments in the upcoming period, this figure is expected to increase to over 34.000 direct employments. Favorable loans for domestic companies, provided by the European Investment Bank created 6.940 jobs." When taking the data about ALM measures from this source, the calculated contribution of ALM is similar as given above. Taking into account the data from this source about realized job creation in the new companies, the contribution of the job openings in the new companies is estimated at around 20-25% of the overall reduction in unemployment.

assumption that participants under these measures get employment and remained employed throughout the analyzed period. This percentage could be higher when taking the impact of all other ALM measures (if they really had impact on the unemployment in the analyzed period).

Within the unemployed population¹³ category, the most common reasons for leaving the last jobs are dismissal due to bankruptcy or redundancy, end of temporary jobs, unsatisfactory working conditions and unpaid jobs. Furthermore, the relatively high unemployment rate in Macedonia is partly considered as result of the population who terminated their last employment for almost the same reasons as unemployed people that have left their job positions, while also including the early retirement as additional significant factor. Another important aspect that can have a negative impact on the unemployment rate on the long run (potentially increasing it) is the high presence of the discouraged persons not seeking for work, because they believe there are no jobs available, in the total unemployed population (10.7% as of 2016) (SSO, 2016a).

Chart 6

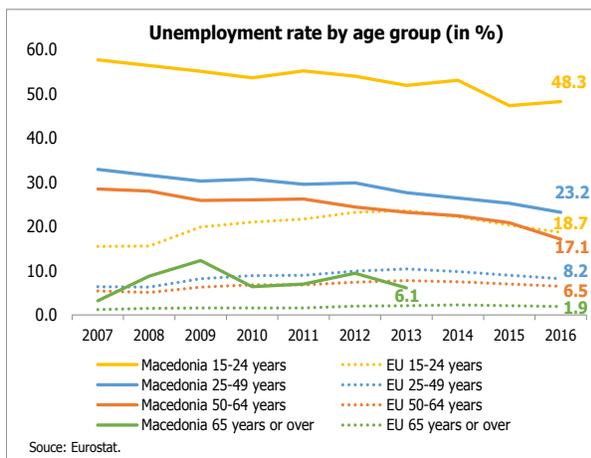
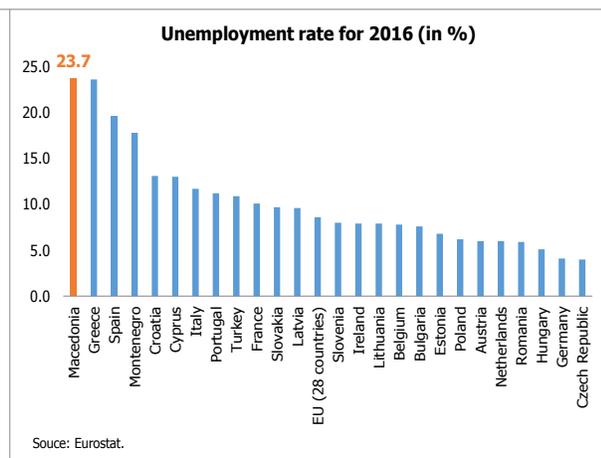


Chart 7



The cross country analysis illustrates that the unemployment rate in Macedonia has constantly been the highest in a sample of selected European countries, besides declining trend in the last decade. Only in the period of escalation of the debt crisis in Greece and afterwards, the unemployment rate in this country has reached a comparable level to the one registered in Macedonia, with this indicator almost equalizing for both countries in 2016. In contrast to the EU average, the unemployment rate in Macedonia is more than twice on a higher level, and above the level of this indicator in some comparable countries in the nearby region (Montenegro, Croatia, Turkey, Bulgaria, Romania etc.), being similar only to the level in Bosnia and Herzegovina (around 22% in 2016). Observed by different age groups, the substantially high unemployment rate in Macedonia is a consequence of its high level registered for the young population, in circumstance of limited job opportunities for this part of the population that is still involved in the education system or has just completed university studies (ILO, 2012b). Furthermore, the unemployment rate for this age group is by 30 percentage points higher than the one registered in the EU, confirming the unfavorable working prospects for the

¹³ Unemployed persons are all persons 15 to 74 years of age who were not employed during the reference week, have actively sought work during the past four weeks and were ready to begin working immediately or within two weeks.

young population in Macedonia. A considerably higher unemployment rate is noted in the older age categories as well (by more than 10 percentage points compared to the EU), implying generally inferior conditions on the labour market as a whole.

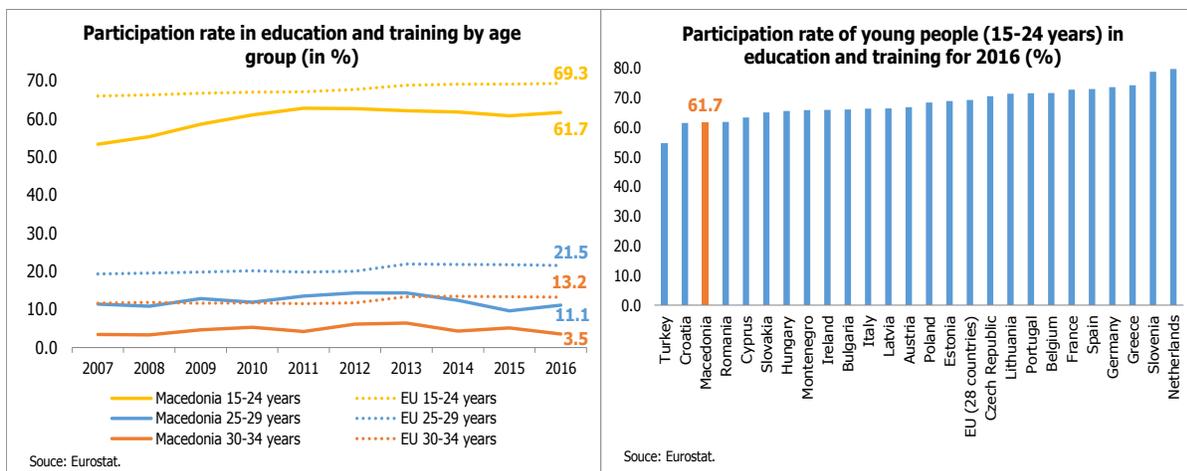
As it was noted in the cross-country analysis, unemployment is highest among young population where unemployment rates were above 50%, but in the last two years we can observe a steady decline below this level. The positive changes observed in the young population category in last couple of years caused by the lower share of this age group can be explained by the change in their preferences in terms of continuing education at the expense of inclusion in the labour force (Elder et al, 2013). The underlying economic reasons for the increased preferences for education are the higher yields from higher education and the greater likelihood of finding a safe and higher paid job. Moreover, in recent years, the reduced share of young people in the workforce was accompanied by simultaneous increase in the share of this age group in the education system. Thus, the participation of young people in the formal and informal education system and training¹⁴ has increased by 8.4 percentage points (from 53.5% in 2007 to 61.7% in 2016) over a period of 10 years. The higher inclusion of the young population in the education system was supported by the structural government measures like the introduction of compulsory secondary education, dispersed studies, the reduced financial costs for higher education, development of the private universities etc. As result of these positive developments the participation rate of the young population in Macedonia is on comparable level to the rest of European economies, although the ranking of the country remains on the bottom of the list. However, a substantial discrepancy¹⁵ between Macedonia and the EU is detected in the participation rate of the persons aged 25-34, which denotes lower share in Macedonia of the population that decide to continue to university level education, complete the education process and attain a degree on relatively early age(SSO, 2016b). In addition, according to Mojsovska–Blazeski et al. (2016), based on the data from Eurostat database, the transition of the young people aged 15-34 from school to work is relatively longer than in the EU. According to findings in the quoted work, in Macedonia in the period 2009-2014 around 40% of the young people transited to employment within 1-3 years after the exit from the education, while in the EU their share was around 70%.

Chart 8

Chart 9

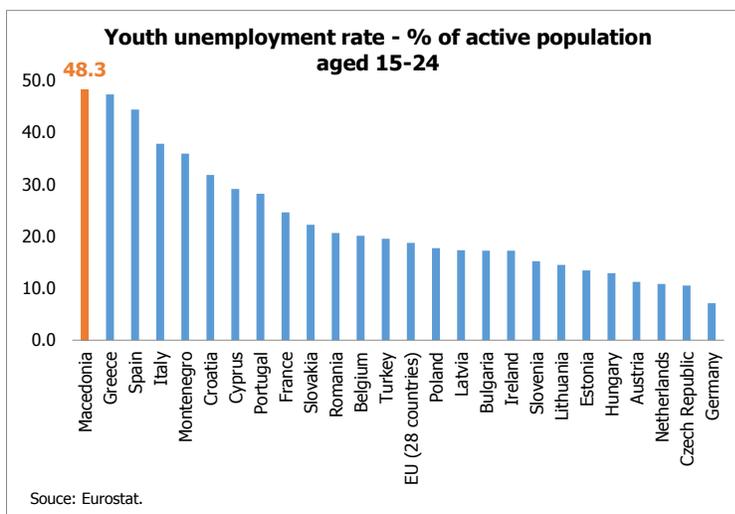
¹⁴ Formal education is defined by International Standard Classification of Education (ISCED) as education that is institutionalized, intentional and planned through public organizations and recognized private bodies. Formal education programs are recognized as such by the relevant national education or equivalent authorities. Informal education and training is defined as any institutionalized, intentional and organized/planned learning activities outside the formal education system.

¹⁵ This discrepancy is around 10 percentage points, separately for the population aged 25-29 and 30-34 years for 2016.



Regardless of these positive developments, youth unemployment¹⁶ in the Republic of Macedonia still remains at a relatively high level. Additional problematic issue attached to this high unemployment rate is its long-term character, which creates negative economic and social consequences for the young people. Among the young population, the most common reason for leaving their last employment are end of temporary jobs or seasonal character of job, unsatisfactory work conditions and unpaid jobs. This category of young people that terminated their jobs has negative impact on the youth unemployment rate (SSO, 2016a).

Chart 10



Moreover, high youth unemployment involves high economic and social costs. From an economic perspective, youth unemployment could be related to potential slower growth in the economic activity in the future, growth of employment in the informal sector, higher state costs for social contributions for unemployed people, lower tax revenues etc. From a social point of view youth unemployment, especially if it is long-term as it is in the case of Macedonia, can

¹⁶ Youth unemployment rate is the unemployment rate of people aged 15-24 as a percentage of the labour force on the same age.

lead to loss of confidence among young people, discouragement for their further active participation in the labour market, and eventually to potential increase in illegal activities and social disturbances in the country (ILO, 2012a). Considering the long-term negative effect that high youth unemployment can have on the overall economic environment in the country, finding an efficient solution to this structural problem is an important prerequisite for ensuring stable economic growth.

Chart 11

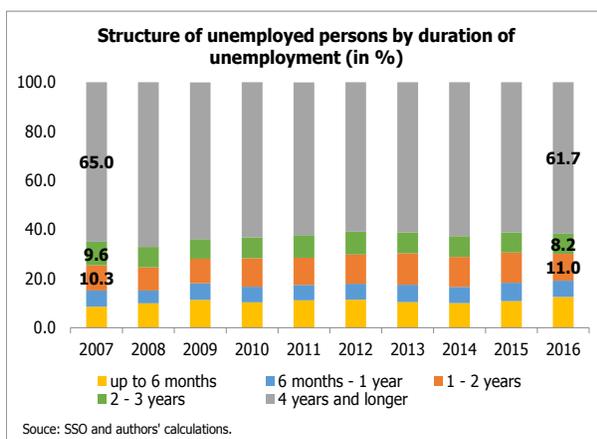
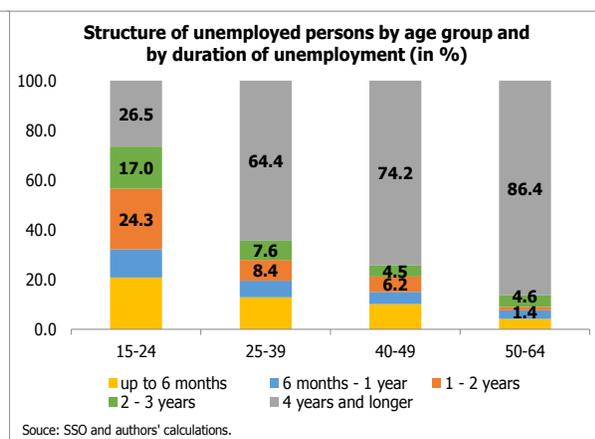


Chart 12



Despite the favourable developments in the last decade in the above presented indicators, the labour market in Macedonia is still characterized by unfavourable structural features (ILO, 2015b). Hence, the unemployment in Macedonia is mainly defined as long-term¹⁷, i.e. over 80% of the unemployed population is looking for a job over a year. This unfavourable structural feature of the Macedonian labour market is partly correlated with the events in the early transition period when many manufacturing facilities were closed and there were massive layoffs. Nevertheless, the share of long-term unemployment still remains relatively high, almost three decades since the beginning of the transition process, which indicates a strong hysteresis¹⁸ effect of the Macedonian labour market. Important aspect of the long-term unemployment is that about 55% of the persons comprising this category are with finished secondary education and only 17% are with finished university level education (based on 2016 data) which implies that the education level has a significant role for the length of unemployment¹⁹ and the necessary time for acquiring a suitable job position.

¹⁷ The long-term unemployment share is the share of the unemployed persons since 12 months or more in the total number of unemployed.

¹⁸ The term "hysteresis" in the economic science refers to a situation when particular historical event has a lasting impact on the movement of economic variables. In the context of the labour market, the effect of hysteresis usually refers to permanent increase in the "natural rate of unemployment" as a result of a specific event, which further contributes to long periods of high unemployment.

¹⁹ The duration of unemployment is defined as the duration of a search for a job or as the length of the period since the last job was held (if this period is shorter than the duration of search for a job).

Chart 13

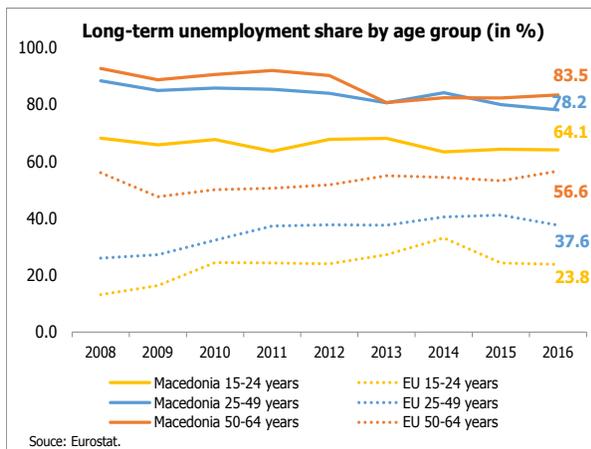
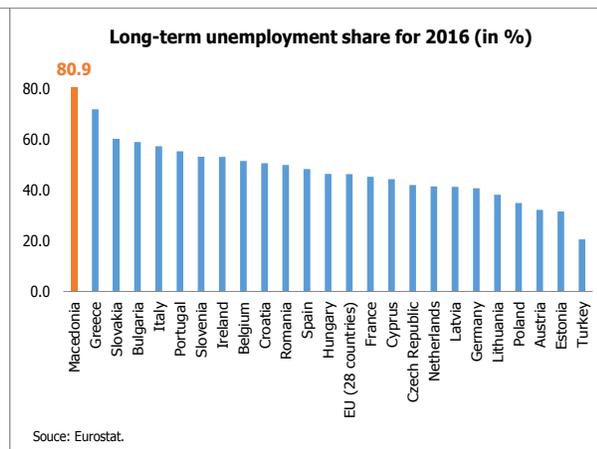


Chart 14



With respect to the age structure, the unemployment with long-term character prevails in each age group. Moreover, during 2016, almost two-thirds of the unemployed young population was looking for a job for more than one year, of which nearly 40% have been unemployed for four years or more. The long-term unemployment can have a negative impact on the prosperity opportunities for the young population and their willingness actively to continue searching for jobs, having in mind that 10.6% of the unemployed persons in this age group are discouraged and not willing to seek for work because they believe there are no jobs available (NBRM, 2014b). Among the middle aged population (25-44 years) the share of discouraged persons is lower (7.5%) which is due to the fact that family obligations and continuous fixed costs create necessity for receiving a salary on regular basis. Consequently, these persons are less likely to give up their active search for job.

Apart from Macedonia, the long-term unemployment share is above 60% in Greece and Slovakia, demonstrating the harsh labour market conditions in these economies in terms of the duration of the unemployment period. However, in the EU, on average this indicator is lower, being below 50% in the past 10-years period. In relation to different age categories, a similar trend is observed in Macedonia as well as the EU. Additionally, the long-term unemployment is lower for the youngest population (although in Macedonia being three times higher compared to the EU), considering the fact that after finishing the education process this population is more likely to join the workforce, meaning that the length of the unemployment period is expected to be relatively short. The long-term unemployment is a common structural characteristic of the older population (with this share being twice higher in Macedonia in contrast to the EU) which most likely is linked to termination of the last employment of this persons as result of three potentially different reasons, dismissal because of bankruptcy or redundancy, early retirement or regular retirement (MF, 2015).

Chart 15

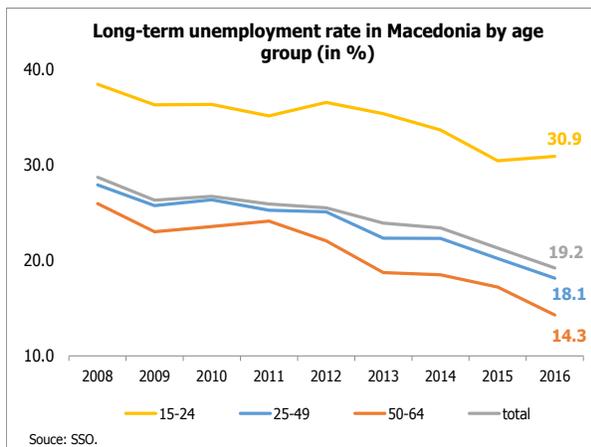
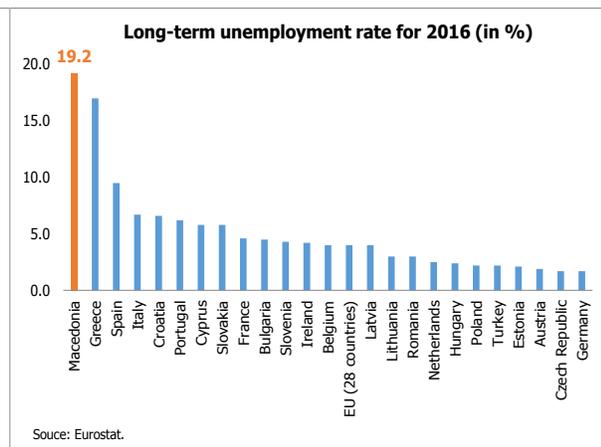


Chart 16



With respect to the long-term unemployment rate²⁰, Macedonia is ranked on the top of the list of selected European countries, with this rate being five times higher compared to the EU average, and with Macedonia and Greece being the only countries where this indicator is a two digit number. Observed by different age groups, the long-term unemployment rate for the young population in Macedonia is almost twice higher than the one registered for the older population confirming that the high level of the overall long-term unemployment rate is mainly due to the young population and its relatively low participation in the labour force.

Monitoring economy using scoreboard indicators with indicative thresholds, under the Macroeconomic Imbalances Procedures²¹ (MIP) of the European Commission implemented in the EU member states may also be useful for monitoring the main areas of vulnerability of the candidate countries, and for understanding their extent of convergence towards the EU. The main indicators for labour market for the Macedonian economy according to the given thresholds within this approach, are given below.

The unemployment rate, as a three-year moving average, although abating in recent years, has constantly been well above the threshold of 10%. Within the labour market segment, the indicators of activity, youth unemployment (aged 15 to 24) and long-term unemployment (unemployed for more than one year) have been additionally monitored. These indicators of the Macedonian economy have seen mainly positive changes in recent years. Youth unemployment and long-term unemployment have a decreasing trend in recent years, while the activity rate was mainly increasing with the exception of 2012 when the 3-year change was negative, reaching the level of the threshold, and 2016 when it reduced by more than the given threshold. Hence, within the internal imbalances, the Macedonian economy shows vulnerability to the overall unemployment rate, albeit with favorable developments in recent years both in this indicator and in the additional indicators of this segment.

²⁰ The long-term unemployment rate is the share of unemployed persons since 12 months or more in the total number of active persons in the labour market.

²¹ Alert Mechanism Report, European Commission, February 2012.

Table 1

Indicators on unemployment	Indicative thresholds		2011	2012	2013	2014	2015	2016
	upper	lower						
Unemployment rate (3-year moving average)		10	31,9	31,5	30,4	29,3	27,7	25,9
Activity rate (3-year change in p.p.)	-0,2		0,5	-0,2	0,3	1,0	0,8	-1,2
Long-term unemployment rate (3-year change in p.p.)		0,5	-2,8	-0,8	-2,8	-2,5	-4,2	-4,7
Youth unemployment rate (3-year change in p.p.)		2	-1,2	-1,1	-1,7	-2,1	-6,6	-3,6

Source: SSO, Eurostat. The fields with figures in red color point to noncompliance with the threshold given within Macroeconomic imbalances approach of the European Commission.

3. Trends and distribution of employment and wages by activities

Analyzed in terms of individual business activities²², the largest part (18.8% as of 2016) of the labour force is employed in the manufacturing industry²³. This capital and labour-intensive industry covers several branches whose performance are rather import dependent and vulnerable to external shocks, i.e. determined by the external developments and movements in world markets for certain products. Unfavorable movements in the prices of individual products on world markets in the past several years resulted in variable performance of domestic manufacturing companies, whose negative effect was also transmitted on the labour market, by stagnation in the growth rates of employed persons²⁴, particularly pronounced in 2014, but also evident in 2016 (SSO, 2016c). However, the upward trend in the number of employees²⁵ in the manufacturing industry in the last few years is mainly associated with the structural changes in the industry sector caused by the operation of new production facilities. The growth in employees' number was also stimulated by the macroeconomic policies that promoted stronger links between the financial sector and the real economy during the crisis period²⁶. In terms of occupation²⁷, almost two thirds of the employees in the manufacturing industry are plant and machine operators and assemblers and craft and related trade workers, having in mind the machinery based operational processes involved in this activity. In the EU, employees holding these two occupations acquire only half of the employed population engaged in the manufacturing industry which is due to the higher presence of technicians and associate professionals.

²² The data cover all economic activities defined by NACE Rev. 2 the common statistical classification system for economic activities in the European Community, except for the activities of households as employers and the activities of extraterritorial organizations and bodies.

²³ According to NACE Rev. 2 classification system, section C.

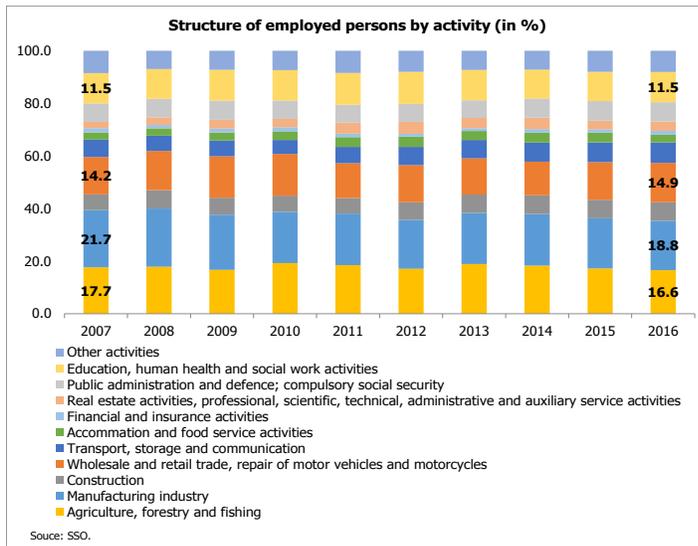
²⁴ Employed persons comprise persons aged 15 years and more who during the reference week worked for at least one hour for a pay or profit or family gain, or persons who were not at work during the reference week but had a job or business from which they were temporarily absent. Employed persons include self-employed persons and employees with temporary contracts. Self-employed persons are the ones who work in their own business, farm or professional practice for the purpose of earning profit, spends time on the operation of a business or is in the process of setting up his/her business. Employees with temporary contracts are those who declare themselves as having a fixed term employment contract or a job which will terminate if certain objective criteria are met, such as completion of an assignment or return of the employee who was temporarily replaced.

²⁵ Employees are defined as persons who work for a public or private employer and who receive compensation in the form of wages, salaries, payment by results or payment in kind; non-conscript members of the armed forces are also included.

²⁶ In the Macedonian economy this is referring to the subsidized interest rates on credit lines provided by the European Investment Bank. The primary objective of these credit lines is to provide capital for supporting the small and the medium-size enterprises that will be directed towards realization of new products, opening new jobs, higher liquidity in the real sector and increased exports.

²⁷ The occupation of the employed population is presented in accordance with ISCO-08 International standard classification of occupations.

Chart 17



Agriculture²⁸ is secondly ranked activity in terms of acquiring substantial portion of the employed population (16.6% as of 2016). The employment growth in agriculture is primarily a response to the several-year agricultural policies of subsidizing agricultural production, access to favorable loans and subsidizing costs for livestock purchase and for growing plantation crops, and economic policies directed towards rapid entrepreneurship growth, among which is the simplification of procedures for business start-ups. Another measure undertaken in this field refers to the implementation of a Pilot-Program that subsidizes users of State-Owned Agricultural Land whose aim is to encourage employment of persons that are social welfare beneficiaries by granting them state-owned agricultural land and paying them compensation in the amount of the welfare and social insurance (MLSP, 2016). In Macedonia, 60% of the employed persons are with elementary education, while almost the entire remaining population hired in this activity is skilled agricultural, forestry and fishery workers. The trend observed in the EU is opposite, with skilled agricultural worker participating with a share beyond 70%, while employees with elementary education hold a share of 15% with simultaneous small presence of other occupations as well.

²⁸ According to NACE Rev. 2 classification system, section A.

Chart 18

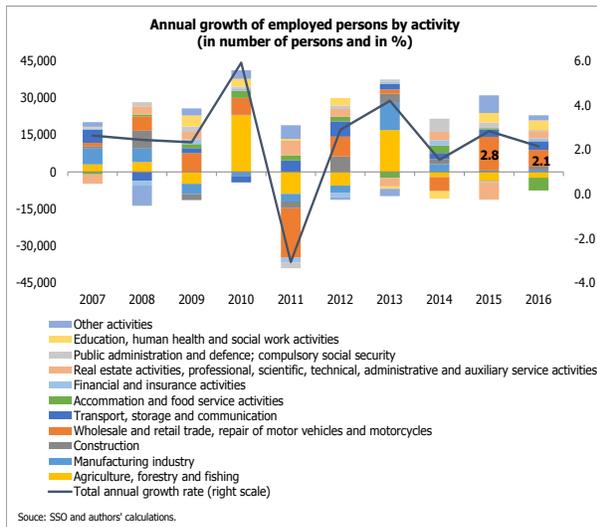
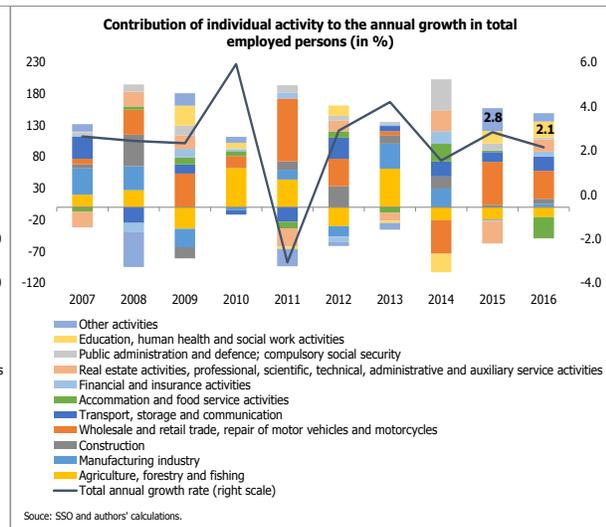


Chart 19



By hiring around 15% of the employed population as of end-2016, the trade sector²⁹ is perceived as highly significant for sustaining the current positive trends on the labour market and for the future pattern of the overall economic activity. It is observed as service activity that is usually characterized by slightly lower level of investment and its achievements are of pro-cyclical nature, primarily dependent on domestic environment developments, but also on global trade flows. Moreover, the trade sector is related to relatively low level of capital per employee, lower demands in terms of required skills (this sector usually offers low-paid jobs that do not require high qualifications), many small operating companies and limited opportunities for innovation. The trade sector in the post crisis period is marked by enhanced investment (mainly foreign) in this sector constituting the entry of new brands, as well as entry of large retail chains, which are generally known as more effective than the small-size sole proprietors and are prone to greater investment in modern technology (SSO, 2016d). All these developments contributed to the increased demand for retail workers, resulting in growth in employees' number in the trading activity as well as potentially new job offerings and employment opportunities in this low-skilled business activity. Unsurprisingly, the dominant occupation of the employees working in the wholesale and trade activity is service and sales workers (almost 55% for 2016). Similar trend is observed also in the EU, where employees with this occupation acquire 44% of the total employees engaged in the trading sector, while a two-digit share (of 11.3%) is also registered by technicians and associate professionals.

²⁹ According to NACE Rev. 2 classification system, section G.

Chart 20

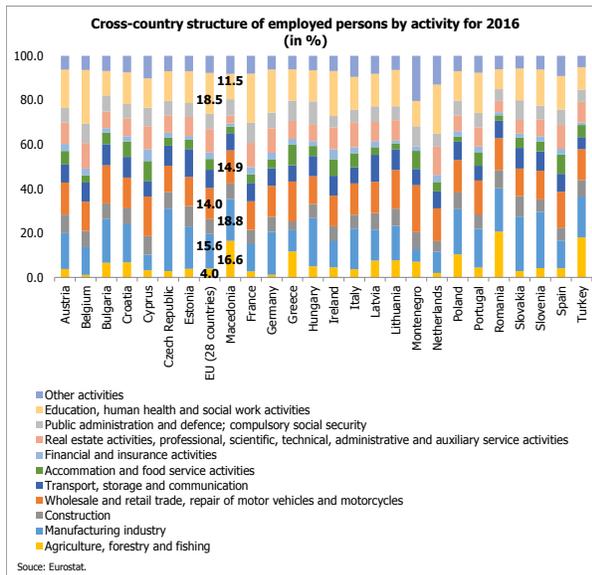
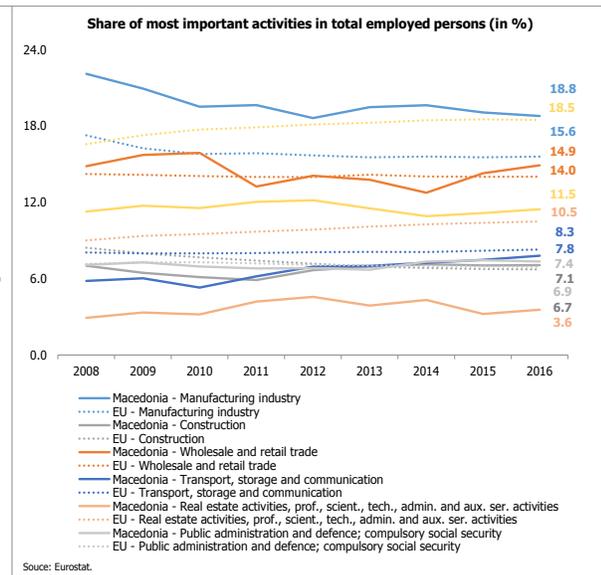


Chart 21



Considerable growth in employees' number in the post-crisis period is also evident in the construction³⁰ sector which holds 7.1% of the labour force. Although, the share of employed persons engaged in the construction sector is almost on the same level as the pre-crisis period (2007), their number experienced considerable growth of almost 40% over the last 10-years period. This movement is contributed by the several year fiscal stimulus in the form of publicly funded construction work, in the field of both infrastructure and building construction, the construction activities of foreign companies in free economic zones, and higher investment in housing construction, also in the form of direct involvement of foreign investors (SSO, 2016e). All these activities resulted in higher labour demand in the construction sector which was simultaneously transmitted in growth in employed persons. The share of employees engaged in this sector is twice lower compared to the previous higher ranked activity (wholesale and retail trade) as a consequence of relatively small number of business entities that can afford to operate successfully in this activity that is based on large capital investment. Also, the relatively smaller number of employees in the construction sector is due to the seasonal character of this activity and the fact that most of the employed labour force is seasonal on part time contracts, meaning that in spring-summer period the reported statistical data on these employees is higher. The twice higher number of employees in the trade sector can be considered as an outcome of the large number of business entities operating in this sector that requires large number of sales workers. Referring to the occupation, 60% of the employees in this sector are classified as craft and related trade workers, and only small part as holders of elementary occupations and plant and machinery operators and assemblers. Likewise, the construction sector in EU is mainly craft and related trade workers based, but the secondly ranked occupation is technicians and associate professionals, whereas in Macedonia the ranking of this profession in the construction activity is relatively low.

³⁰ According to NACE Rev. 2 classification system, section F.

Chart 22

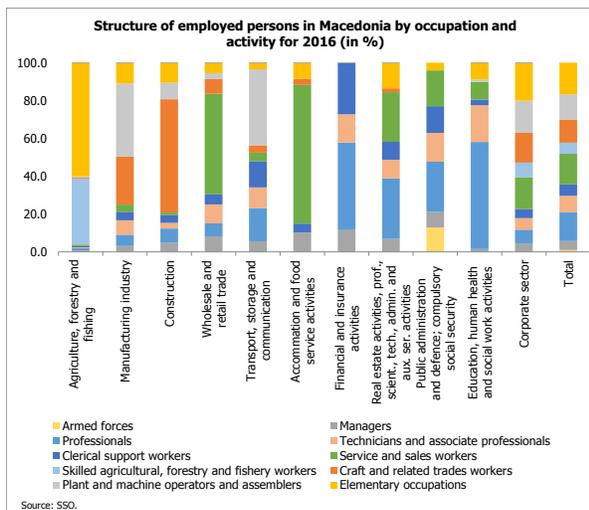
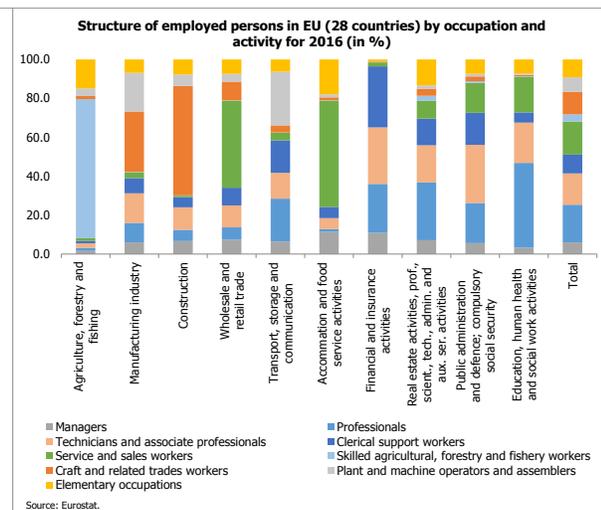


Chart 23



Similarly to Macedonia, the manufacturing industry and the trade sector on average employ around 30% of the labour force in selected European countries, confirming the significance of these activities for the labour market. Compared to a sample of European economies, Macedonia is ranked on the lower end in terms of the relative importance of the activities accommodation and food service, financial and insurance activities, real estate, professional, scientific and technical activities and the public administration³¹. Still, Macedonia, Romania, Greece and Poland as agricultural countries remain the only ones where the agriculture, forestry and fishing activity attains a two digit number in the structure of the employed population. Observed by individual activity, the share of financial and insurance activities and education, human health and social work activities in the overall working population is approximately twice lower in Macedonia in contrast to the EU, signifying the relatively lower importance of these sectors. At the same time, the share of the real estate, professional, scientific, technical, administrative and auxiliary service activities in the overall labour force is three time lower in Macedonia as opposed to the EU which is due to the fact that these specific professional, technological and science based activities are still insufficiently developed in Macedonia, therefore, not offering sufficient opportunities for new employment and further prosperity of the already employed persons.

The relatively lower importance of some sectors in Macedonia, compared to the EU can be monitored through the European Innovation Scorecard (EIS), which enables countries to assess performance, track progress on key aspects and identify policy priorities. This EIS is considered as valuable resource for policy makers to design policies that support innovation and hence jobs and growth in Europe. Performance of innovation systems is measured by average performance of 27 indicators. Based on the average performance scores as calculated by a composite indicator, the Summary Innovation Index, each country falls into four different performance groups: Innovation Leaders with innovation performance well above that of the EU average,

³¹ According to NACE Rev. 2 classification system, Accommodation and food service activities is denoted by section I, Information and communication by section J, Financial and insurance activities by section K, Real estate activities by section L, Professional, scientific and technical activities by section M, Administrative and support service activities by section N, Public administration and defence; compulsory social security by section O, Education by section P and Human health and social work activities by section Q.

Strong Innovators with performance above or close to that of the EU average, Moderate Innovators with performance below that of the EU average and Modest Innovators with performance well below that of the EU average. Compared to 2010, the innovation performance of the EU has increased by 2 percentage points³². However, not all elements of the EU innovation system have been improving at the same rate. Performance has improved most (21 p.p.) in human resources, and almost equally in innovation friendly environment, firm investments and attractive research system (between 12-14 p.p.), while on the contrary, decline in performance was registered for three dimensions, finance and support, innovators and linkages. For Macedonia as a Modest Innovator, performance has increased by 10.4 percentage points relative to that of the EU in 2010. Notable structural differences between the Macedonian and the EU economy measured in terms of the general structure of the economy, business indicators and socio-demographic indicators are considered in view of: the larger share of employment in industry, smaller share of employment in service, lower buyer sophistication, lower GDP per capita, lower population growth rate, lower population density. The relative strengths of the innovation system in Macedonia are in sales impacts, firm investments and innovation friendly environment while relative weaknesses are in finance and support, employment impacts and intellectual assets. Similarly to EU, most significant improvement in performance was registered in human resources and innovation friendly environment, with the employment impact being the only innovation dimension that observed downward movement. Differently from EU, where considerable improvements were noted in firm investments and attractive research systems, the improvements in these innovation dimensions were considerably lower in Macedonia (Hollanders and Es-Sadki, 2017). The substantial lower performance improvements and developments in these two innovation dimensions were the main reasons why the above mentioned professional, technological and science based activities have lower importance for the Macedonian economy and employee only small portion of the labour force.

³² At the level of individual member states results differ with an increase in performance in 15 countries and a decline in performance in 13 countries. Performance has increased most in Lithuania, Malta, the Netherlands, and the UK, and decreased most in Cyprus and Romania. Comparing the EU member states to other European and neighboring countries, Switzerland remains the most innovative European country, Iceland, Israel and Norway are strong innovators, Serbia and Turkey are moderate innovators, while Macedonia and Ukraine are modest innovators.

Chart 24

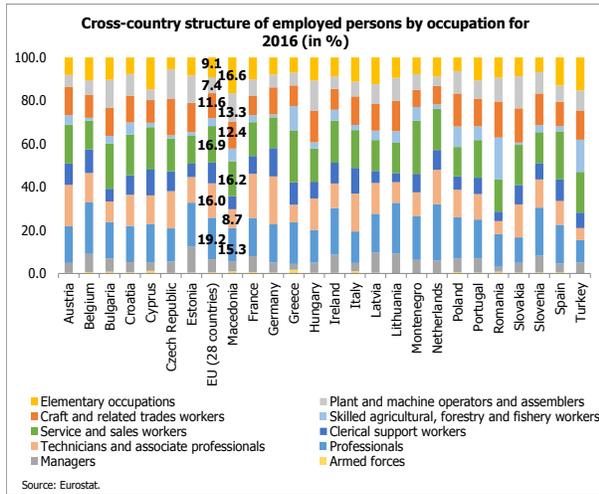
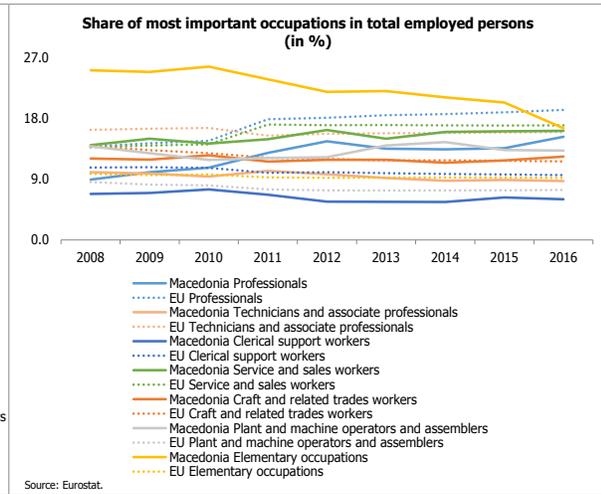
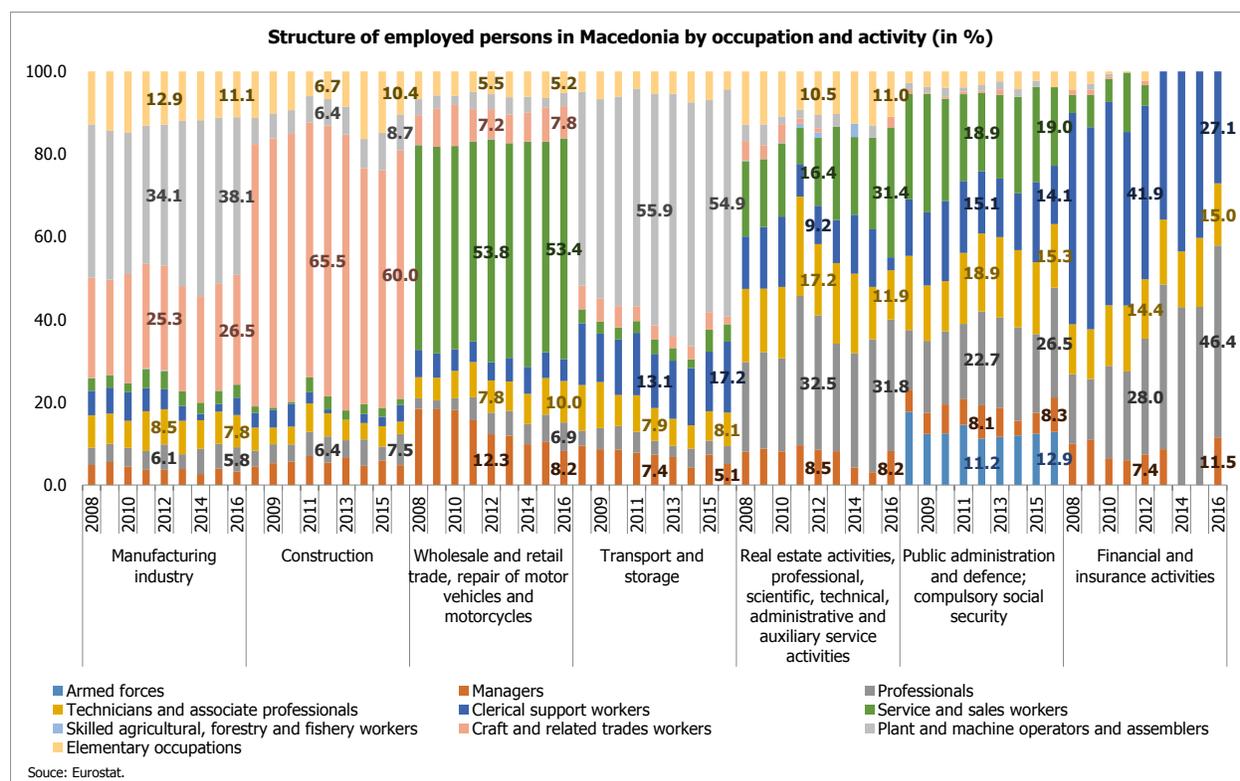


Chart 25



For the overall working population the most common are the lower paid occupations (elementary occupations and service and sales workers), which apart from the lower educational level of the older age groups is contributed by the higher labour demand for these professions. Simultaneously, professionals comprise significant part of the labour force (15.4%), demonstrating the current population trends of attaining higher educational degree, driven by the ambition for better employment. This trend has already been present in the EU for years behind, which is proved by the fact that professionals and technicians and associate professionals represent approximately 35% of the labour force. Still, the substantial share of service and sales workers and craft and related trade workers in the total employed population is due to the prevailing significance of the manufacturing industry and the trade sector, activities that are mainly dependent on labour with lower level of education and skills. The increased share of professionals with simultaneous decrease in clerical support workers and elementary occupations in total employed persons in the post-crisis period can be linked to the more sophisticated technological processes and continuous technological improvements in regular business operations, structural changes in the labour market and education system, increased demand for more professionally educated employees within the whole economy and specific economic segments as well as changes in the general underlying components for labour demand.

Chart 26



In the immediate post crisis period (2011-2012) there was decrease in employees' number that was mostly pronounced in the activity employing largest part of the labour force, wholesale and retail trade, but at the same time being considerably high in the manufacturing industry and financial and insurance activities. Observed by occupation, the decline in the trade sector was in the managers occupational category, while for manufacturing industry there was decline in clerical support workers and elementary occupations, at expense of increase in professionals and plant and machine operators and assemblers. In the third activity experiencing largest decline in the working population, the financial sector, considerable part of the service and sales workers and technicians and associate professionals were replaced with professionals. Focusing only on the immediate post-crisis period, activities that are mostly based on routine operations in terms of routine implementation of certain tasks and at the same time (excluding the first activity) are considered to be more prone to technological changes and automatization, as it is the case in the trade sector, which is mostly based on sales; manufacturing industry with main focus on production activities and financial intermediation that engages in financial service, faced weaker employment recovery, not being able to attain adequate labour force with required qualifications for performance of regular activities. This issue along with the downward movement in employees' number have stabilized as time passed by and full economic recovery followed. In 2016, the trade sector experienced the largest increase in employees' number determined by higher demand for service and sales workers, while the increase in construction sector was due to higher employment of professionals and craft and related trade workers, with the increase in transport and storage being largest for plant and machinery operators and assemblers and clerical support workers.

Chart 27

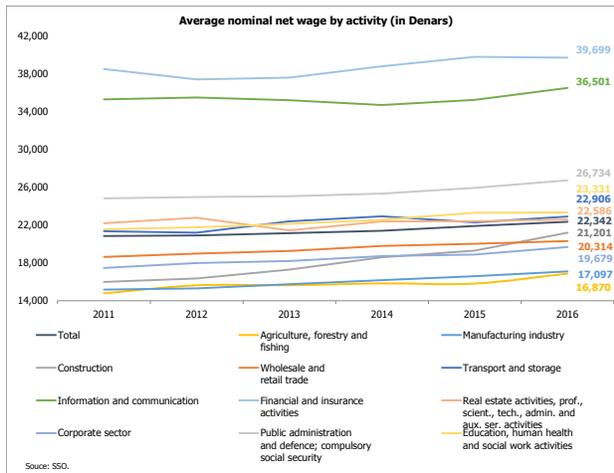


Chart 28

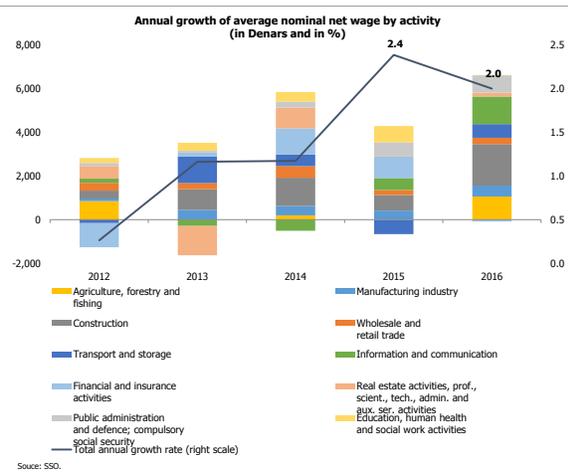
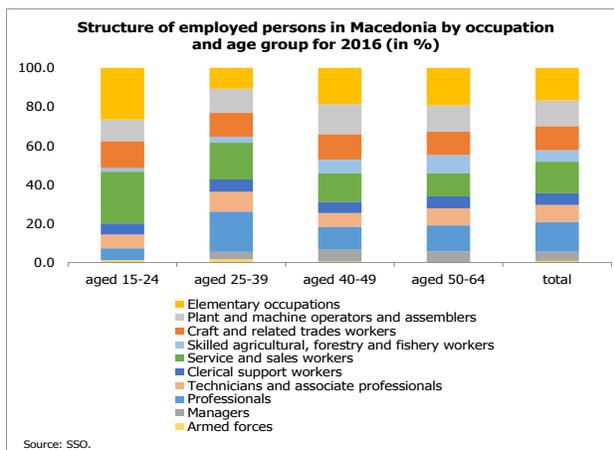


Chart 29

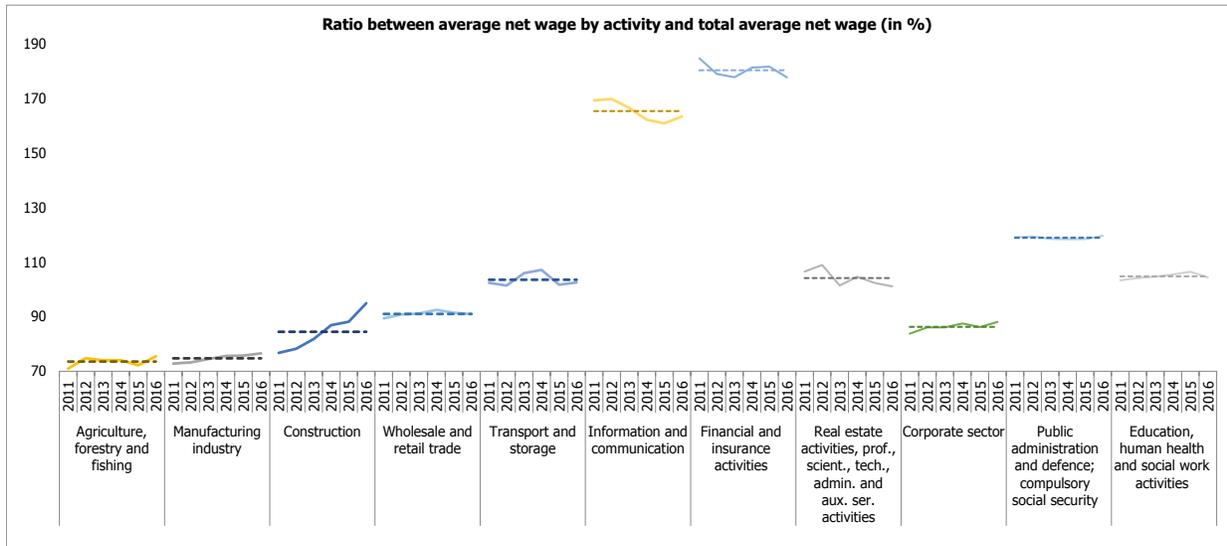


The ratio between average net wage by activity and the total average net wage³³ for all employees in the country is highly above 1 in the financial and insurance activities as well as information and communication, indicating higher compensation of the labour force engaged in these sectors. Therefore, employees hired in the mentioned activities are considered as highly paid compared to the average employee in the country, which creates greater aspiration for the young population to specialize in these fields that would result in greater labour supply. In some other activities as public administration and defense, real estate, professional, scientific and technical activities, as well as education, human health and social work activities the average net salary is just above the one registered for the overall employed population. What is important to note is the constant upward trend of the ratio between the average net wage in construction and the total average net wage which is approaching the level of 1 as a result of the higher pay off provided to employees in this sector, following the growing activity in the construction sector, and hence, the greater demand for labour. The growth in construction activity was the main driver of GDP growth in 2016, reflecting above all the civil engineering

³³ The square dot line in Chart 30 for each individual activity represents the average value for the ratio between average net wage and total average net wage over the period 2011-2016.

works in the implementation of publicly funded infrastructure projects. Therefore, the increased construction activity in the country is mostly encouraged by the high profit margins in the construction business, accompanied by strong public investment of state construction in recent years, which attracted numerous construction companies and investors in this business. In conditions of current expansion in the construction sector, the performances of construction companies are mostly conditioned by the maintenance of solid level of government investment activity in this sector, as well as favorable performances on the real estate market.

Chart 29



According to the amount of average net wage, about 62% of employees receive a net wage of Denar 8.000 to 20.000, which is below the average net wage for 2016. Most of the employees in this wage category are employed in the manufacturing industry, wholesale and retail trade, construction and transport and storage, sectors in which is engaged largest part of the active population on the labour market. On the contrary, only 19% of employees have a net wage equal or greater than the average monthly net wage, from which slightly less than half are working in the public administration and defence, compulsory social security, education, human health and social work activities, while only 16% are involved in the manufacturing industry. In line with the average net wage growth, the number of employees receiving net wage in the interval of Denar 12,000 to 25,000 also increased. The occurrence of this event escorted by the reduction in the number of employees in lower wage categories was detected in the manufacturing industry, wholesale and retail trade and transport and storage. On the contrary, only 1.5% of the employed population falls into the category of highest monthly wage (over Denar 40,000). Additionally, about one third of the employed in this wage category are registered in the activities information and communication, financial and insurance activities and public administration and defence. The other category with relatively high new wage, capturing net wages in the interval of Denar 30,000 to 40,000 is characterized with high concentration, due to the fact that about half of the employees with monthly wages within this interval are

hired in the corporate sector³⁴. At the same time, high share (of about one third) in this wage category is also registered for the employees engaged in the financial and insurance activities, health and social work activities and public administration and defence (SSO, 2016a). The analysis on the distribution of employees hired in different sectors by category of average net wage ascertains the relatively higher compensation paid to the employees in the information and communication, financial and insurance activities and the public administration and defence, compared to the labour force engaged in other activities. Most of the employees involved in these highly paid activities by occupation are professionals, technicians and associate professionals, clerical support workers and managers. Similar trend in the mentioned highly paid activities is registered also in the EU but with slightly lower share noted for the occupation managers.

Chart 30

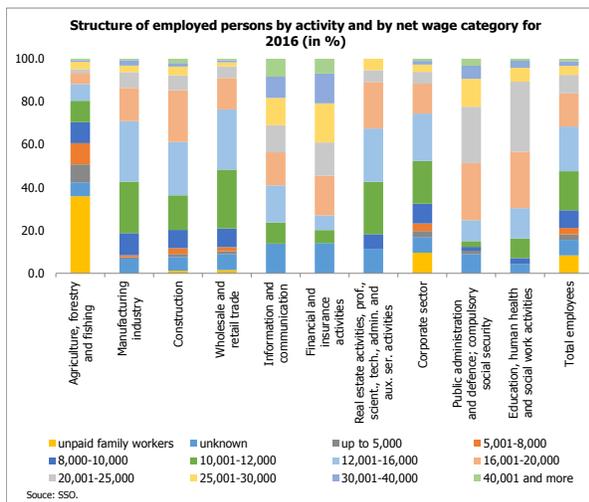
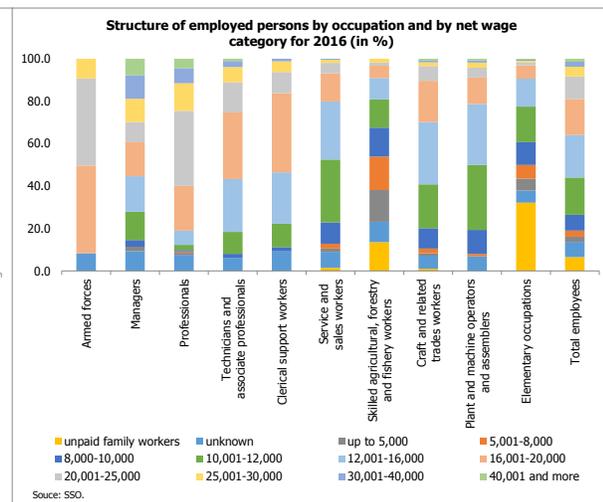


Chart 31



According to the occupation, in the wage category that incorporates largest part of the employed population (the recipients of net wages between Denar 8,000 and 20,000), about half of them are service and sales workers, plant and machine operators and assemblers and craft and related trades workers. In addition, almost 70% of the employees with net wage equal to or greater than the average net wage in the country are professionals, technicians and associate professionals and managers. The most paid occupation is professionals, given the fact that they account for 45% of the total employees with net wage over Denar 30.000 (SSO, 2016a).

By individual activities, taking into account the above analysis of the employed population and labour cost, it can be noted that the substantial increase in employees' number in some activities was accompanied by simultaneous increase in net wages, although the second one was less pronounced. The parallel increase in the employees number and net wages in the

³⁴ Corporate sector includes companies and sole proprietors whose main activity, according to the National Classification of Activities (NCA), is industry (which includes entities with main activities of mining and quarrying, supply of electricity, gas, steam and air conditioning and water supply, sewerage, waste management and environmental recovery activities), wholesale and retail trade, and repair of motor vehicles and motorcycles, construction, agriculture, forestry and fishing, transport and storage, information and communications, accommodation and food services, real estate activities, professional, scientific and technical activities and auxiliary activities.

activities that accumulate large part of the working population (almost 30% as of end-2016), i.e. wholesale and retail trade, transport, storage and communication and construction, could be linked to the undertaken active labour market measures and to some extent due to improvements in performance of particular segments of the economy. These positive developments enabled employers to provide higher compensation to current and new employees.

4. Skills supply and demand mismatch by activities

The skills supply and demand mismatch is one of the largest challenges the labour market is facing nowadays. This globally present mismatch emerged as important issue in the post global crises period³⁵. Thus, the global financial crisis is considered as an event that caused increase in long-term unemployment, as well as lower specific significance of certain sectors of the economy. Accordingly, the extensive job losses in individual Euro area countries and especially the concentration of this process in certain activities³⁶, led to large mismatch between the skills supply and demand on the labour market. The tightness of the labor market has decreased substantially compared to the pre-crisis period. Although there are differences between member states, there is, at aggregate level, no evidence of quantitative shortages where labour supply falls short of demand. However, we observe tighter labour markets in some member states, highlighting that labour demand and supply are not balanced across member states. Moreover, geographical mismatches within countries, i.e. shortage of workers in one region and surplus in another region are present in Belgium, Italy and Spain. As the crisis largely decreased the tightness of the labour markets throughout Europe, qualitative shortages may grow if the economic recovery picks up (EP, 2015).

In order to determine the skills supply and demand mismatch on the Macedonian labour market this analysis uses data on occupied posts³⁷ and job vacancies³⁸ by sectors of activities, along with the subsequent result of job vacancy rate³⁹ by individual activities⁴⁰. Additionally, it is essential to take into account the discrepancy in net wages among different activities, which is considered as a significant reason for the existence of large number of job vacancies in

³⁵ With the aim to address the severity of this problem, the task group of the Monetary Policy Committee within the European central banks system released a report, which, inter alia, reveals the construction of the index of skills supply and demand mismatch for the Euro area countries and the outcomes thereof on the unemployment rate. The movement of the index implies strong mismatch between supply and demand of skills from the beginning of the crisis. At the same time, the report discloses evidence that this problem is mainly caused by structural imbalances between supply and demand of skills rather than a lack of geographical mobility of labour within the Euro area. The report also identifies differences in terms of the nature and extent of this problem among member states of the Euro area, but the general conclusion is that the mismatch between skills supply and demand has a significant effect on the unemployment rate (ECB, 2012).

³⁶ The job losses in the Euro area are mostly concentrated in industry and construction. The decline in the number of employees in the construction sector is particularly evident in Estonia, Ireland and Spain, partly reflecting a downward correction in real estate prices subsequent to the registered price boom.

³⁷ An occupied post means a paid post within the organization to which an employee has been assigned.

³⁸ A job vacancy is defined as a paid post that is newly created, unoccupied, or about to become vacant: for which the employer is taking active steps and is prepared to take further steps to find a suitable candidate from outside the company concerned; and which the employer intends to fill either immediately or within a specific period of time.

³⁹ The job vacancy rate (JVR) is the number of job vacancies expressed as percentage of sum of the number of occupied posts and the number of job vacancies. This rate measures the proportion of total posts that are vacant. It is expressed by the following formula: $JVR = \text{number of job vacancies} / (\text{number of occupied posts} + \text{number of job vacancies}) \times 100$.

⁴⁰ In Macedonian labour market the data on occupied posts, job vacancies and job vacancy rate is available for all business activities except for agriculture, forestry and fishing.

particular activities. In this context, job positions offered in some activities may be perceived as unattractive to the workforce if they are considered as insufficiently paid in contrast to the difficulty of regular tasks that are required to be done. Thus, the young population would decide not to specialize in some particular segments (in terms of continuing education to obtain a university degree on particular topic) that they consider as poorly paid and not offering opportunity for further prosperity. This creates lack of certain skills of the labour market. On the contrary, there would be excess of particular skills that are considered as trendy, attractive and prosperous by the young population, which creates larger supply in conditions of limited demand and needs for employees in specific economic fields. This excess of skills in circumstances of lower demand will eventually increase the unemployment rate.

Chart 32

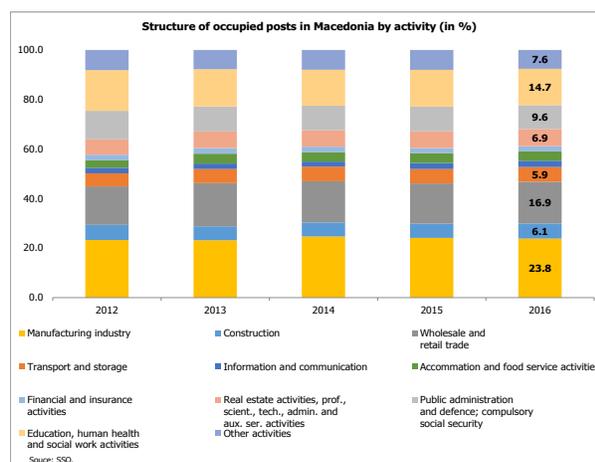
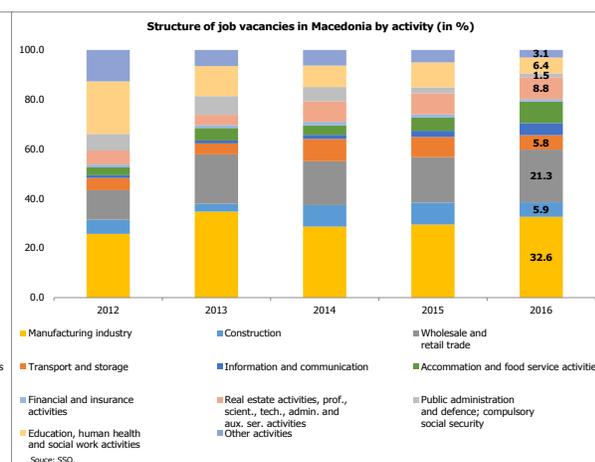


Chart 33



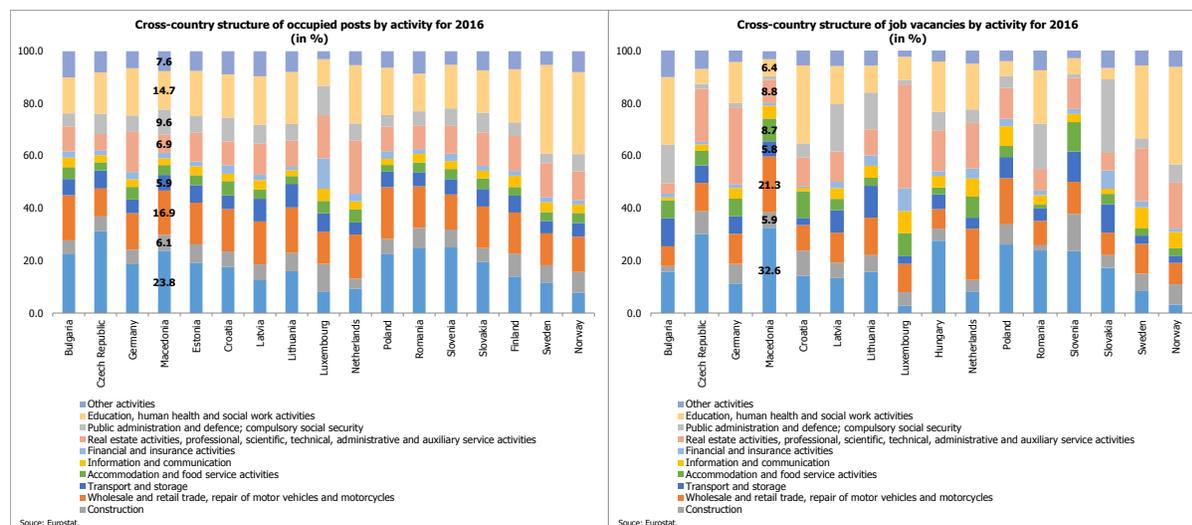
Consistent to the growth in employees' number, the number of occupied posts⁴¹ in the Macedonian economy also registered upward movement in 2016. Largest growth in the number of occupied job positions is identified in the trade sector, construction, manufacturing industry and information and communication. It is also important to note the substantial relative growth (of almost 10%) in the number of occupied posts in the professional, scientific, technical, administrative and auxiliary service activities, although these activities acquire only 6.6% of total occupied posts and even less than 3% of total employed persons. This movement in the occupied posts demonstrates increase in labour demand in these specific activities. Furthermore, half of the occupied job posts are concentrated in the manufacturing industry, the trade sector and education, human health and social work activities, with the first one acquiring almost 25% of total occupied posts in the country (SSO, 2016g). Similar trend is observed in selected European economies as Czech Republic, Poland, Slovenia, Slovakia, Croatia, Romania,

⁴¹ The number of occupied posts is lower than the total number of employed persons due to the fact that occupied posts refer to job positions that have been registered as opened job opportunities on the labour market, more precisely as job vacancies and have later been filled in by the workforce. Therefore, occupied posts include only job positions that have been publicly disclosed and the labour force had the chance to apply for and at the same time they were also registered as available job positions in the Employment Service Agency of the Republic of Macedonia. On the contrary, employed persons include self-employed persons and all types of employees with temporarily contracts (part of which are not registered in the Employment Service Agency of the Republic of Macedonia and thus not included in the number of occupied posts), employee categories that are not included in the number of occupied posts. The difference in the number of occupied posts and total number of employees is also due to different data sources, in the context that some data is collected directly from firms, while other portion of the data is from labour force surveys that are usually based on approximations and are not precise.

Bulgaria, Germany and Estonia, where the manufacturing industry is the largest employer, holding dominant position in the occupied posts structure, while the occupied posts in education and human health and social work activities are secondly ranked, just before the trade sector. Considerable share (of more than 13%) of occupied posts is also captured by the real estate, professional, scientific, technical and administrative activities in developed economies among which Netherlands, Luxembourg, Germany, Finland and Sweden, indicating the high significance of these activities for the labour market and the overall economic performance, an issue that has just started gaining importance in the Macedonian economy⁴².

Chart 34

Chart 35



The growth in the number of occupied posts was accompanied by decline in the number of job vacancies for the first time in 2016, in contrast to the previous years when both of these measures followed an upward trend. Reduced number in job vacancies in 2016 is a signal for consequent employment of the unemployed population. The increase in the number of occupied posts and the simultaneous decrease in job vacancies imply that on one side some business entities are working with optimal number of employees that enable them satisfactory performance in current economic conditions, while on the other side there are some companies that are resistant to employ new labour force because of cost cutting and other specific activity/firm related factors. By individual activity, half of the reduction in job vacancies was concentrated in the construction sector which is correlated to the increase in the number of occupied posts in this sector, but also indicates the gradual saturation of the real estate market. However, increase in job vacancies was registered in some activities as information and communication (maybe reflecting migration outflows of these profiles, in terms of increasing demand for skilled workers by this growing market segment) and accommodation and food service activities. In terms of the number of job vacancies, currently largest job opportunities are offered in the same activities that have largest share in occupied posts. In fact, more than half of the job vacancies are offered by the manufacturing industry and the trade sector (SSO, 2016g).

⁴² The EU is not included in the cross-country analysis of occupied posts due to the fact that not all EU member states report data on the number of occupied posts in Eurostat database.

Compared to selected European economies, the significance of these two activities on the demand side is less pronounced. Furthermore, Macedonia and the Czech Republic are the only countries where the manufacturing industry captures almost one third of the job offerings and with Macedonia being the only one where the trade sector is registered as provider for more than 20% of the vacant job positions. Still, the joint significance of these activities, although considerably lower than in Macedonia is above 30% in the Czech Republic, Poland, Hungary, Slovenia, Romania and Lithuania. It is important to note that the real estate, professional, scientific and technical activities are considered as highly significant in countries as Czech Republic, Germany, Sweden and Luxembourg, by providing more than 20% of the available job vacancies. Nevertheless, the public administration and defense, compulsory social security, education, human health and social work activities in some developing European economies as Croatia, Latvia, Romania, Slovakia and Bulgaria and also in developed countries as Norway and Sweden⁴³ play an important role by offering considerable portion (of more than 30%) of opened job opportunities on the labour market, whereas in Macedonia this share is relatively low (7.9%).

Chart 36

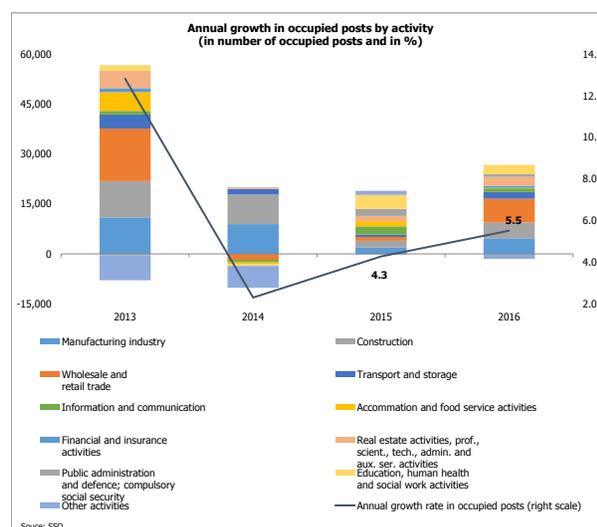
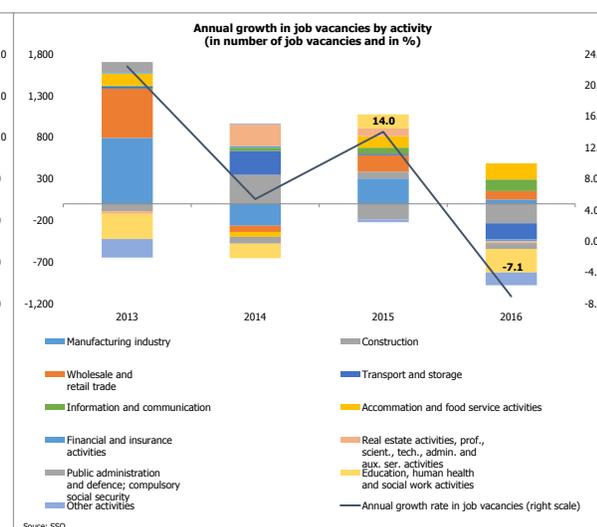


Chart 37



The analysis of job vacancies by occupation demonstrates that largest number of job offerings is provided for service and sales workers, with this occupation holding one third of the total available job vacancies due to numerous entities operating in the trade sector, but also due to the fact that this type of staff is needed in all business activities. At the same time, there is high demand for technicians and associate professionals and also to smaller extent for elementary occupations and plant and machine operators and assemblers, employees that are primarily engaged in the industrial activities (mostly reflecting the job creation in the new entities with foreign capital) and the construction sector. However, decline in job vacancies in 2016 was experienced for most occupations with exception of service and sales workers and technicians and associate professionals for which the demand for employees still follows an upward trend (SSO, 2016g).

⁴³ The EU is not included in the cross-country analysis of job vacancies due to the fact that not all EU member states report data on the number of job vacancies in Eurostat database.

Chart 39

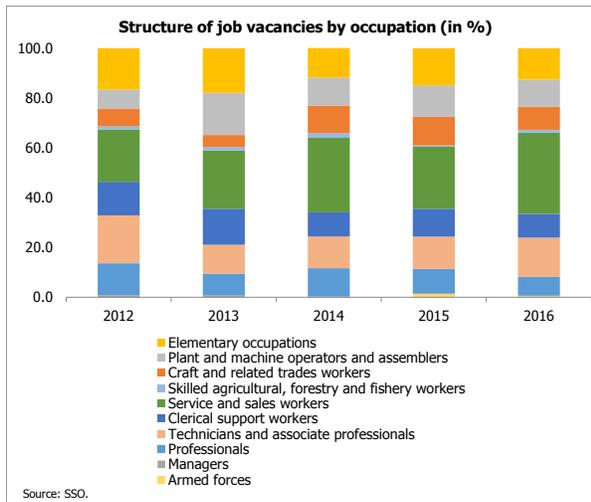
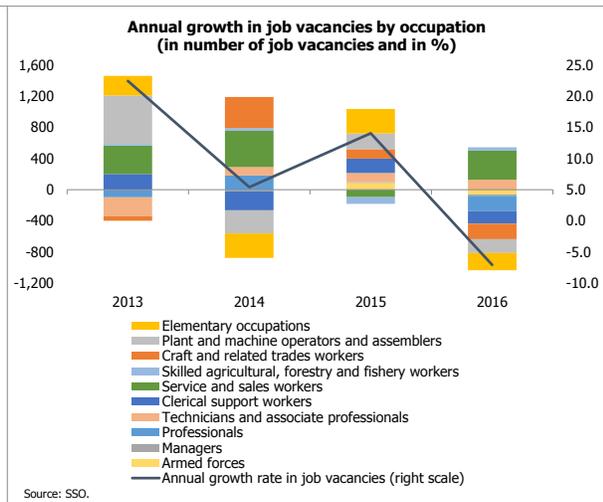


Chart 38



As it was illustrated in the previous section in terms of the observed trends among the employed population, the manufacturing industry absorbs largest part of the labour force at the same time holding largest share in the occupied job positions (23.8% at end-2016). Nevertheless, it is the activity with largest number of job vacancies (one third of total job vacancies in the economy). The dominant position of this activity in all mentioned aspects is due to large entities operating in this business and its production nature that is machinery dependent, and due to its high production volume which is also highly labour intensive.

Chart 39

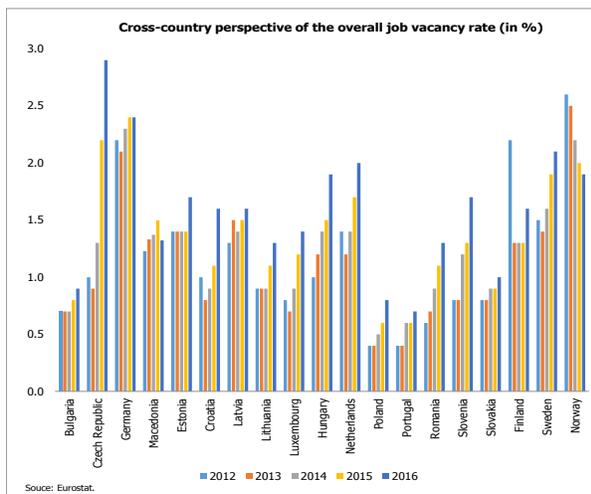
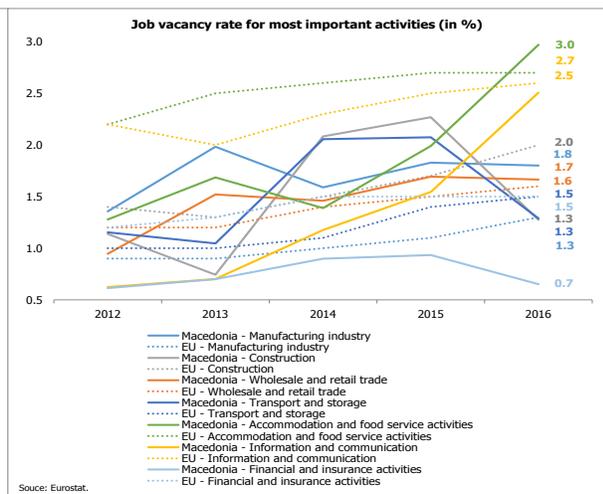


Chart 40



The low level of the job vacancy rate in Macedonia is verified by comparative analysis with selected European countries. Moreover, the cross-country analysis illustrates that the overall job vacancy rate is lower only in some economies as Austria, Belgium, Poland and Slovenia, while for the rest of the countries for which there is available data, this ratio exceeds 1.5%. The job vacancy rate in Macedonia is positioned just below the upper interval among the countries included in the sample for the activities manufacturing industry, wholesale and retail trade, accommodation and food services and information and communication, signifying comparable

level of job opportunities in these sectors in Macedonia and the rest of European economies. However, in other activities as construction, financial and insurance activities, professional, scientific, technical and administrative activities and public administration activities, the job vacancy rate in Macedonia is lagging behind the average level for the analyzed European economies, indicating limited demand for employees in these fields. With respect to specific countries, the overall job vacancy rate and the job vacancy rate by individual activity is highest in Bulgaria obtaining values that are twice to even five times higher than the ratios registered in Macedonia⁴⁴. The high job vacancy rate in Bulgaria, especially pronounced in the last three years can be considered a consequence of the quite rapid emergence of new job opportunities, which in circumstance of limited skills offering require longer time to be filled in, This is due to specialization of employees in particular economic fields or occupations that are considered as attractive with higher compensation, but can also be considered as a result of the present trend of population emigration in other developed EU countries (seeking for better job opportunities and higher salaries). Nevertheless, the numerous job opportunities in Bulgaria, demonstrated by the job vacancy rate contributed to twice lower unemployment rate over a two year horizon (2016 in relation to 2014). The closest values of the job vacancy rates between these two countries are detected for the accommodation and food service activities and information and communication. Furthermore, the cross country analysis of job vacancy rate by individual activity illustrates that this rate is highest for the professional, scientific, technical and administrative activities in Bulgaria, by attaining value of 8.7%, which is indication for the growing importance of these activities for the labour market within European borders. The value of this ratio is considerably high, being almost twice above the second highest registered job vacancy rate which is for the accommodation and food service activities in Bulgaria. It is of enormous importance also to remark the fact that the highest job vacancy rate is on average five times higher than the average job vacancy rate obtained by all economic activities in the analyzed countries.

Compared to the sample of all EU member countries, the job vacancy rate in Macedonia is slightly above the one listed for EU only in the activities manufacturing industry, accommodation and food service activities and the trade sector. In all other activities where the ratio of available job positions in Macedonia is lower than the EU, the discrepancy between the two is small, not exceeding 1 percentage point, observed by individual activity. Different from Macedonia, the job vacancy rate in 2016 followed an upward trend in the EU⁴⁵ that was observed in all activities, but mostly evident in construction sector, manufacturing industry and professional, scientific, technical and administrative activities. Qualification mismatch is the main factor for increase in job vacancies in the EU. Employers indicate difficulties recruiting people with the required skills and there is evidence of qualification mismatch. Although sectoral shortages have decreased strongly after the crisis, specific occupational shortages remain. This

⁴⁴ By individual activity, the job vacancy rate in Bulgaria is approximately twice higher than the one registered in Macedonia for the activities wholesale and retail trade, transport and storage, financial and insurance activities and education, human health and social work activities; three time higher for construction sector; fourth time higher for public administration sector and even five times higher for professional, scientific, technical and administrative activities.

⁴⁵ The cross-country analysis on job vacancy rate includes EU as all of its member states report date on the job vacancy rate for almost all business activities (except for agriculture, forestry and fishing, public administration and defense; compulsory social security, education, human health and social work activities, arts, entertainment and recreation and other service activities) in Eurostat database, which is not the case with the input variables for the calculation of this rate (occupied posts and job vacancies) for which there is no available data for the EU.

implies that, on one hand, companies have difficulties recruiting people with the required skills and, on the other hand, that jobseekers have difficulties in finding a job matching their preferences or qualification level. Throughout Europe there is some consistency across Member States when it comes to occupational groups with shortages: metal, machinery and related trade workers, science and engineering as well as ICT professionals. Qualitative shortages and especially skill mismatches indicate that additional training and retraining is necessary to counter these shortages, which take time to have an effect. This implies that filling open vacancies with unemployed is often not an option in the short-term and reducing the current labour market shortages is therefore not a quick-fix for unemployment. Different European labour markets may have very different needs for workers at different qualification levels. This implies that an optimal allocation is not necessarily achieved when the majority of workers and/or jobseekers obtain high qualifications, and there may be an equal need for people with specific skills for lower skilled jobs (EP, 2015).

There are some potential policies or measures that can be enacted by employers, member states or EU institutions in order to alleviate qualified labour shortages. These measures can be classified according to their aim: bringing more people into the labour market through activation strategies, using international mobility to attract workers, getting more out of less labour by increasing productivity, bringing the skills of the workforce and unemployment up to the level requested by the labour market through training and education, making sectors and occupations more attractive by improving working conditions and increasing transparency on the labour market. Several EU member states have developed good practices to counter their particular qualitative shortages. We provide a short overview of six measures, grouped into three categories. The first category includes measures aimed at activating young people by facilitating the transition from school to work. In Italy this is realized by matching young people to the employer's needs through better guidance and the provision of internships (increase participation through school-to work transition), while in Germany the measure aims to attract and train young people from abroad (increase intra-EU mobility by attracting skilled workers). Both these measures focus on young people as a target group and help countering shortages on a short-term basis. The second category focuses on employer-led initiatives to counter shortages. In Ireland and the UK, measures were designed which allow a flexible response to employer's training needs (change the skill level by providing training). It enables employers to train their workers, but also the unemployed, in the skills needed on the labour market. These measures are also effective to respond to relative short-term needs. A final category looks at measures influencing educational choices. In Austria and Poland the focus was on formal education. Moreover, in Austria employees were targeted to change their career by following educational programs, mainly technical, leading to qualifications necessary to fill shortage occupations (change the skill level by providing training). In Poland, young people were encouraged to take up technical studies as well, by providing scholarships to students with high grades and by improving the educational programs (change the skill level by making education more attractive). As formal education takes a longer period to complete, the effect on shortage is less immediate than for other measures (EP, 2015).

The EU contributes substantially in a number of domains to enable member states respond to shortages effectively. Activation of workers is supported through the use of EU structural funds that are complemented by initiatives focusing on young people by supporting their activation

and especially the school to work transition. Mobility is strongly supported by the EU's effort to reduce barriers to mobility by setting up targeted mobility schemes. At the same time EU skills strategies and European Social Fund are employed to support member states experiencing skills mismatches. Through EU labour law, several non-wage areas of working conditions are regulated at EU level, ensuring adequate working conditions while monitoring tools are used to support labour market transparency.

From the above analysis it can be ascertained that there is a certain discrepancy between supply and demand of skills on the Macedonian labour market. Although some of this mismatch is cyclical and partly corrected with the economic recovery, nevertheless this discrepancy, to large extent, has a structural character. Observed from the dynamics, there is a trend of decrease in the job vacancy rate almost in all activities in 2016 implying a favorable downward movement of the skills mismatch (NBRM, 2013a). These positive developments are contributed by the persistent education reforms (especially the compulsory secondary education, as well as the opening of dispersed studies in several cities in Macedonia), as well as active employment programs and measures. Hence, further application of such active labour market measures is expected eventually to contribute to more efficient filling of available job vacancies, for the creation of which it is essentially important the relative wages (by activities and occupation) to be sufficiently flexible to ensure adequate response to supply and demand in case of emergence of shortage of certain skills.

5. An overview of the active labour market measures

The labour market policy generally speaking involves two groups of measures: active and passive. Despite the same objective of dealing with the unemployment, these two groups of measures are rather different. While passive labour market measures (PLM) intended to secure income to the unemployed people, the active labour market measures (ALM) are oriented towards reduction of the unemployment by improving the skills of the jobseekers, providing incentives for job creation or job search assistance to the unemployed. Obviously, the main advantage of the ALM measures is that they strengthen the individual ability of the jobseekers and functional capacity of the labour market on permanent basis.

Many studies supported the ALM measures and the need of their complementarity with PLM measure, promoting the role of the ALM measures as effective means for increasing labour efficiency and reduction of unemployment (OECD, 1994). Thus, ALM measures became quite popular in advanced economies since 1990s, while in the emerging economies they appeared later, mainly during the last decade. ALM measures in the Central and Southeastern Europe are mainly related to the transition process and the associated issue of the unemployment. Important difference regarding the environment for ALM measures implementation in emerging economies is the share of the informal unemployment as well as the weaker institutional capacity in these economies (ILO, 2017).

There are different types of ALM measures and many of them are oriented towards achieving different objectives – both economic and social. The variety of ALM measures allows for appropriate combination of measures in line with country specifics. According to ILO (ILO,

2017), there are five main groups of ALM measures: trainings, public works, employment subsidies, support for self-employment and micro enterprise creation and labour market services. The last group refers to job search assistance, career advice and connecting the jobseekers and the employers. The features of all five groups of measures are different across different countries regarding the involved participants, duration or linkages/conditionality to some other government measures.

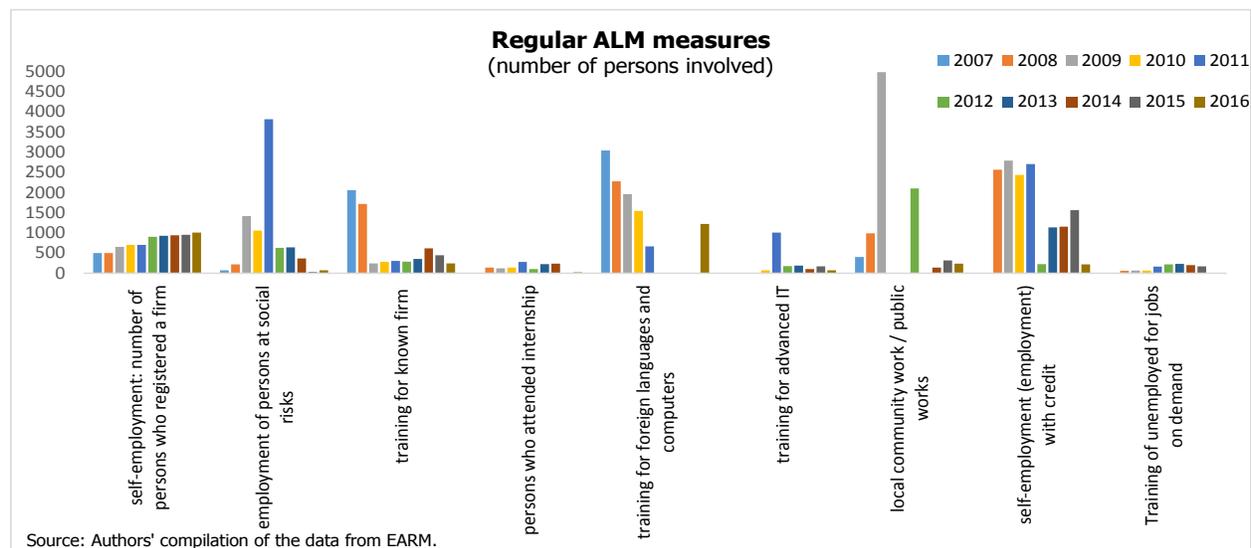
Besides large variety of measures, in the literature there are already efforts to assess the use and benefits of the ALM measures. According to ILO Compendium for the ALM policies in Latin America implemented since 1990 (ILO 2017), in six analyzed countries the mostly used measures were trainings (44% of total measures, on average), followed by self-employment support (with share of 28% of the total, on average). The labour market services (12%) and public works (11%) were less popular, while subsidies are least used (5%). Regarding the main target group of the ALM measures in Latin America, most of them (24%) were oriented towards youth, other unemployed population (19%) and vulnerable individuals (15%). In addition, 12% of the measures, on average were oriented towards the employers, mainly small and medium enterprises and the rest towards the others. It is very important the qualitative assessment of the ALM measures, regarding their effectiveness. The studies focused on Latin America have shown a positive impact of the trainings, in general, on improving the employment opportunities and chances to find a formal employment, although it is difficult to conclude that they are the most effective among ALM measures. Duration seems to be important determinant of the effectiveness of the trainings (longer are more effective). In addition, the subsidies and self-employment programs were also mainly positive regarding unemployment reduction, while public works were mainly providing income support during participation. Finally, different studies as a common conclusion refer to the finding that the ALM measures were more effective among women in Latin America. Regarding age groups, the evidence from other regions (ILO, 2017) have shown higher effectiveness for prime-age (25-54) workers compared to the youth or older participants.

European Commission (2016) regarding ALM policies argues that the success of ALM measures depends not only on the expenditure levels, but also on their design and implementation. Regarding subsidies for employers, the general attitude by the European Commission (EC) is that they are relatively costly, should be targeted at the most disadvantaged groups and accompanied by additional measures (especially after expiration of subsidies) that will improve long-term employability of workers. Monitoring of both the subsidized firms and beneficiary workers is crucial. EC in its study (2016) also confirms the trainings with strongest positive long-term effect, especially on-the-job-trainings and vocational training programs (workplace- based or combined with school-based), in the process of facilitating the transition from the educational system to work. Counselling and job-search assistance are assessed as valuable, especially if they are based on individual or tailor-made approach according to the assessed needs of the job seekers. This type of measure calls upon appropriate staffing and resources to the employment agencies.

6. Active labour market measures in Macedonia

The ALM measures in Macedonia are clearly noticeable since 2007 onwards⁴⁶, which refers to relatively short period of usage, compared to some other countries or regions. Between the implemented measures, the usual types of measures are present, although some of them on regular basis (Chart 43), while the others with breaks in the usage.

Chart 41



Within the regular measures, there are several measures that usually involve higher number of participants: self-employment based on selection of business plans and support for registering a firm, subsidies for employment of persons at social risk, training for foreign languages and computers, public works, self-employment with credit and credits to firms for job creation. Although implemented quite regularly, in some of the measures there is discontinuity (visible in public works). Trainings in foreign languages and computers involved more participants at the beginning of their use, which gradually has been reduced in the following years, with a breakage of several years. This may indicate absorption of the unemployed people lacking this type of skills, assuming that new generations are better educated in these areas. The measure for self-employment based on a training for developing a business plan and support for registering a firm of the selected business plans involves increasing number of participants, while the self-employment and new employments with credits involve less participants in recent years. The employment of persons at social risk is oriented towards persons with some difficulties to enter labour market (single parents, invalids, older people, workers from companies under liquidation). The general trend in this measure, excluding the pick in 2011, is declining number of persons involved. The training for a known firm (that sometimes means employment in the same firm) involved more people at the beginning of the implementation, while further their number reduced. These changes eventually can be due to the financing issues or the effects and interest for the implemented measures⁴⁷. Finally, within the regular

⁴⁶ All the data related to ALM measures are based upon Annual Reports of the Employment Agency of the Republic of Macedonia (EARM).

⁴⁷ The EARM reported cases in which the number of involved people were much lower than planned.

measures, the smallest number of participants has been involved in the internship, training for advanced IT skills and trainings for jobs on demand. It is interesting to mention that the group of jobs on demand may differ across the years, however the working profiles for which there is a market demand are mainly different types of crafts, especially in the area of construction, car industry, hotels and restaurants, but also for medical specialized staff.

Chart 42

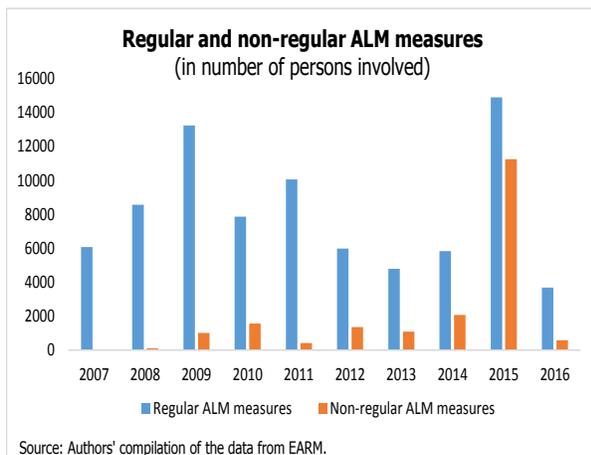
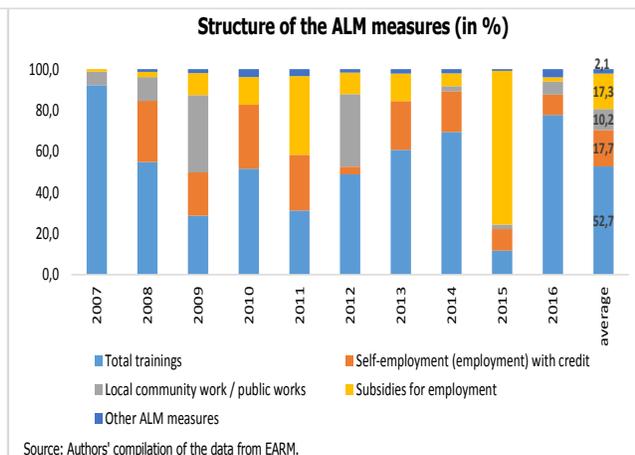


Chart 43

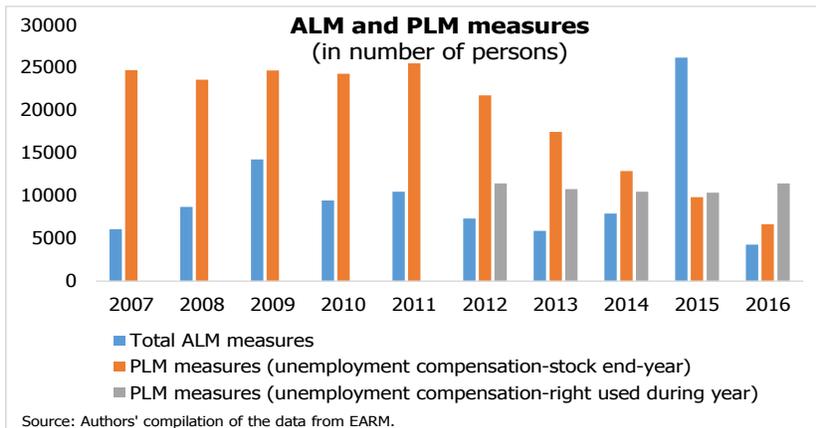


The non-regular ALM measures are quite diversified and sometimes they have been used for only couple of years and then discontinued. Some of them are specialized trainings in some specific field (crafts, tourism, security, truck drivers) or specific support for firms regarding new jobs openings. Regarding number of involved persons, from the non-regular measure it is worth to mention the release of social contribution for the employment of young persons under the age of 29 in 2015 (within the project "Macedonia employs"). Some of the non-regular measures are quite new, started in 2016 (support for opening kinder garden and retirement homes, support for fast growing firms).

Looking into the structure of the overall ALM measures (regular and non-regular), on average in the period 2007-2016, the most used were the trainings as an active measure aiming to improve unemployed persons' ability to find a job on the market by meeting the requirements of specific skills. On average, 52.7% of the involved persons into ALM measures, were involved in different types of trainings (as explained above). Self-employment and support for self-employment / employment with credits are the next most popular measures which involved 17.7% of all persons under ALM measures and also subsidies for employment (for persons at social risks and young) with similar share (17.3%). Public works engaged 10.2% of the overall number of persons under ALM measures and the remaining part refers to the other ALM measures. This structure seems to be similar to the experience in Latin American countries⁴⁸ regarding dominance of the trainings and also the significant share of the self-employment measures, with difference that subsidies are much more present in Macedonia than in Latin America.

⁴⁸ Into Macedonian structure of the ALM measures, the number of people under labour market services group is not taken into consideration, due to lack of data.

Chart 44



* For PLM, the data on persons that used the right of compensation during the respective year is available from 2012. The compensation for unemployment can be provided for several months within the year.

The passive labour market (PLM) measures in Macedonia are mainly present by payment of unemployment compensation⁴⁹. It is clearly noticeable the declining trend of the number of persons receiving the unemployment compensation that is in line with the unemployment reduction and / or presumably stricter criteria for receiving this income. On the other hand, besides development of the ALM measures, they still have changeable dynamics. In total, for the overall analyzed period more people were covered by PLM.

The comparison of the ALM measures use in Macedonia with the EU member states indicate that the structure of the ALM measures is in line with the EU practices, with dominance of the trainings in Macedonia but also in Germany, Croatia and Slovenia. It is interesting that the share of the trainings is increasing in Germany and Croatia both, although Germany labour market situation is in much better shape compared to Croatia. During the crisis the trainings in Greece significantly reduced within the ALM measures, negatively affecting the unemployment that increased during the crisis.

Chart 45

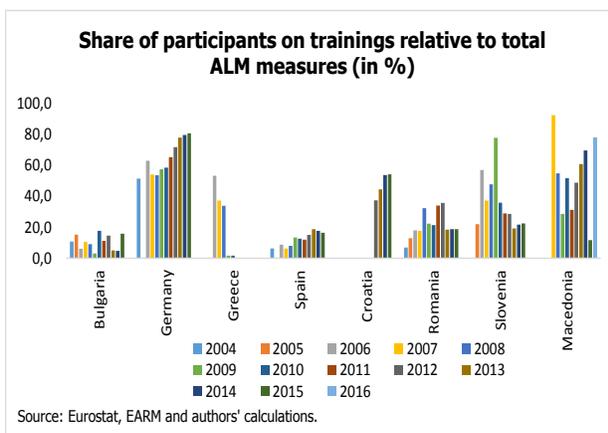
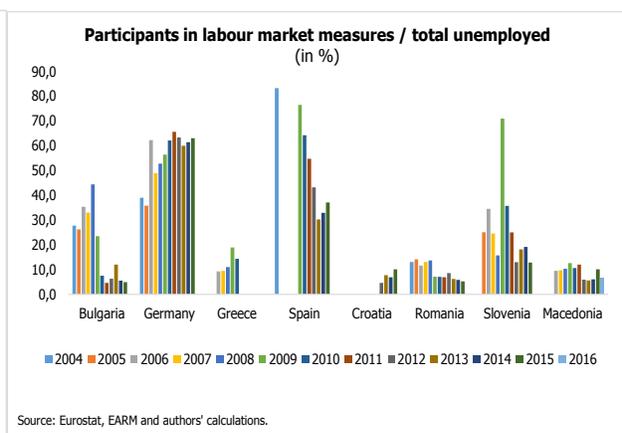


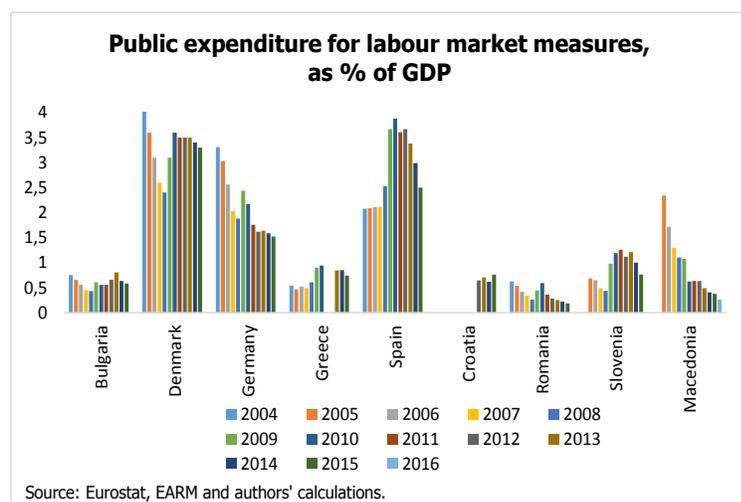
Chart 46



⁴⁹ Most of the unemployed population receives the health insurance benefits (in 2008, they were 67,4% of the total unemployed).

When looking into the coverage of the unemployed persons with labour market measures (ALM and PLM measures, both), it is obvious that Macedonia still has a room for improvement. While in Macedonia the coverage of unemployed population with labour market measures reaches around 12% at most, in Germany and Spain it was 40-60% of the unemployed persons. It is obvious that in Bulgaria and Romania this coverage reduced during the crisis, that could be due to either cut of expenditures or increase of unemployment. Macedonian coverage of the unemployed population with labour market measures is still comparable to Bulgaria, Romania, Croatia, however, considering the unemployment rate in Macedonia, stronger efforts are needed into further development of labour market measures, especially ALM measures and their effectiveness.

Chart 49



Additionally, advanced economies like Denmark and Germany allocate more resources from the budget for labour market policies, compared to some of the other EU countries, except Spain where higher expenditures are related to the increase of the unemployment during the crisis. On average, in the EU in the period 2005-2011 around 1.9% of GDP have been allocated for the labour market measures. Macedonian expenditures in this area in the last years are lower⁵⁰, but still comparable with some of the new EU member states (Bulgaria and Croatia), and even higher than in Romania. The decreasing trend of the public expenditures relative to GDP in Macedonia is mainly driven by the smaller number of participants under PLM measures, which leaves room for more funds to be allocated towards ALM measures which are already confirmed as more effective in dealing with the unemployment.

The effects of the ALM measures in Macedonia is still difficult to assess, considering relatively short period of time, non-regularity in some of them as well as changeable dynamics across the years. Therefore, there are not many studies for evaluation of the effects⁵¹ and generally speaking it is difficult to derive a usual pattern of the impacts, although it is visible that

⁵⁰ When analyzing public expenditures for labour market measures in Macedonia, one should bear in mind that there are ALM measures covered by grants and credits, therefore the overall funds are probably higher.

⁵¹ Mojsoska-Blazevski and Petreski (2015) have done evaluation on the impact of the ALM measures in Macedonia, based on a survey performed in 2014 and by using econometric techniques of evaluation. However, they reported relatively low response on the survey and got mixed and ambiguous results.

intensification of ALM measures is in line with the unemployment decrease in recent years. When looking into correlation coefficients, only subsidies for unemployment have shown negative, but weak correlation (-0.34) with declining trend of the unemployment. On the other hand, trainings have strong positive correlation of 0.7 with the unemployed, meaning less trainings with declining unemployment, although it is not clear if it means that the need of trainings has been absorbed to some extent⁵².

In addition, the decrease of job vacancy rate in 2016 pointed to better skills matching, indicating that the new job offerings are generally successfully fulfilled by the unemployed persons (although it is not clear to which extent this is related to the ALM measures). Additionally, in the empirical literature (European Commission, 2016) it is generally accepted that usually there is a delay in the impact of the ALM measures, although it varies between different measures, with usually smaller impact on a short run and more substantial impact over job findings on long term.

7. Conclusions and policy recommendations

The unemployment in Macedonia has deep roots, related to the transition process of the economy, that contributed to the long term unemployment. However, in the last years there is a trend of unemployment decline, due to the several factors, but mainly to job creation in the new companies with foreign capital, and in line with active labour market measures and measures against grey economy. The economic cycle also contributed to these positive developments on the labour market. This paper outlines the developments in the main labour market indicators in Macedonia, compared to the EU and selected European countries. The trends in employees' number and net wages by activities are also examined in this analysis. Another important issue that has been touched upon in this paper is the skills supply and demand mismatch by activities. Special contribution is the analysis of the ALM measures implementation in Macedonia, considering their usefulness in improving the labour force and therefore the ability for providing a job.

The analysis on the distribution of employees hired in different sectors by the amount of average net wage reveals significantly higher compensation paid to employees relative to total average net wage in the information and communication, as well as in financial and insurance activities. The discrepancy in net wages among different activities is one of the drivers for the existence of skills supply and demand mismatch on the Macedonian labour market. Encouraged by this factor most of the labour force is attracted to specialize and obtain skills that are considered attractive, prosperous and highly paid. This movement on the one side generates larger supply in conditions of limited demand for employees in specific economic fields that will eventually increase the unemployment rate, while on the other side it creates lack of certain skills on the labour market. Most of the occupied job posts are concentrated in the manufacturing industry, the trade sector and education, human health and social work activities, which at the same time are the activities offering largest job opportunities. In 2016 there is a trend of decrease in the job vacancy rate in almost all activities which is a signal for

⁵² The other groups of ALM measures and ALM measure total have weak positive correlation with the unemployed.

consequent employment of the unemployed population and indicates a favourable movement in the skills mismatch. The active employment programs and measures and the persistent education reforms are one of the underlying factors for these positive developments on the labour market. The continuous application of such active labour market measures will result in more efficient filling of job vacancies, for which it is important to ensure adequate response to supply and demand of skills that is accomplished by sufficient flexibility of wages by activities and occupation.

The analysis has shown that the ALM measures are in place since 2007 onwards, although had different dynamics across the years. They have the usual structure as in the other countries, with dominance of the trainings, followed by self-employment measures and subsidies for employment. However, the coverage of the unemployed persons with labour market measures as well as the budget funds allocated for this purpose in Macedonia are much lower compared to the advanced EU economies and EU on average, although still comparable with some of the new EU member states. However, the decline in the number of persons treating with passive labour measures makes a room for funds allocation towards ALM measures, even more the receiving of unemployment benefits could be conditioned by involvement in some of the ALM measures, in order to improve the ability of the unemployed people for job finding.

Regarding trainings, besides for skills usually requested on the market (foreign languages and computers) it is very important that they are for the professions for which there is a demand on the market. It is already well known that the new companies with foreign capital created demand for many specific professions, therefore providing some guidelines for the type of the trainings under ALM measures. In order to be effective regarding job reduction obviously the trainings must be well designed in view of the subject and duration. Furthermore, the ability for job providing is highly dependent on the formal education, therefore the efforts towards vocational education system could also contribute towards employability of the people. In addition, the concept of life-long learning is highly supported and recommended in EU (within MIP) in dealing with the long term unemployment, with special emphasis on the need for engagement of the older or long term unemployed persons in trainings for improving their job seeking ability (they may be outdated and not in line with current requirements on the market).

Impacts of the ALM measures in Macedonia is still difficult to evaluate, considering relatively short time of their use, non-regularity in some of them as well as different dynamics across the years. However, in order to appropriately assess the impacts of the ALM there is a need of a proper system of ex-post monitoring of the involved participants in order to have track on training participants and whether they have really improved the ability for job seeking after the training as well as the long term track on the established firms under self-employment and credit-financing measures. Evaluating impacts of the ALM so far should create a basis towards their better design in the future.

Literature

Aaronson, S., Fallick, B., Figura, A., Pingle, J. and Wascher, W. (2006) The recent decline in the Labour Force Participation Rate and its Implications for Potential Labour Supply. Brookings papers on economic activity 1(2006): 69-134;

Corbanese, V. (2015) Assessment of delivery of employment services and programmes for youth by the Employment Service Agency of the FYR of Macedonia. International Labour Organization;

Elder S., Novkovska, B. and Kristeva, V. (2013) Research on the transition from school to work, International Labour Organization, Gevena, July 2013;

European Central Bank, 2012, Euro Area Labour Markets and the Crisis, ECB Occasional Paper Series No. 138, October 2012;

European Commission, 2016, European Semester Thematic Factsheet: Active Labour Market Policies, November 2016;

European Parliament, 2015, Labour market shortages in the European Union, Directorate General for International policies, Policy Department A Economic and Scientific policy, March 2015;

Hollanders H. and Es-Sadki N. (2017) European Innovation Scorecard 2017, Maastricht University (Maastricht Economic and Social Research Institute on Innovation and Technology – MERIT) European Commission, Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, as part of the European Innovation Scoreboards (EIS) project;

Hotchkiss, J.I. (2009) Decomposing changes in the Aggregate Labour Force Participation Rate. Federal Reserve Bank of Atlanta Working Paper Series 2009-6a;

International Labour Organization, 2012a, The youth employment crisis: Time for action, Report of the Director-General, International Labour Conference, 101st Session, Geneva 2012;

International Labour Organization, 2012b, Action Plan on Youth Employment 2015, Government of the Republic of Macedonia and the Ministry of Labour and Social Policy, Skopje 2012;

International Labour Organization, 2015a, National Employment Strategy of the Republic of Macedonia, 2016-2020, International Labour Organization, World Bank and UNDP, October 2015;

International Labour Organization, 2015b, Decent work country programme of the Former Yugoslav Republic of Macedonia 2015-2018;

International Labour Organization, 2017, What works: active labour market policies in Latin America and Caribbean;

Ministry of Labour and Social Policy (2013) National Strategy for poverty reduction and social exclusion in the Republic of Macedonia, 2010-2020, March 2013;

Ministry of Finance (2015) Fiscal Strategy of the Republic of Macedonia 2016-2018. Ministry of Finance and Government of the Republic of Macedonia, Skopje, October 2015;

Ministry of Labour and Social Policy (2016) Operational plan for active programs and measures for employment 2016;

Ministry of Finance (2017) Economic Reform Programme of the Republic of Macedonia, January 2017;

Mojsoska-Blazevski N. and Petreski M. (2015), Impact evaluation of active labour market programmes in FYR Macedonia: Key findings, ILO, 2015;

Mojsoska-Blazevski N., Petreski M., Ristovska M., Todorovski D. (2016), Labour-market scars when youth unemployment is extremely high: Evidence from Macedonia, Partnership for Economic Policy (PEP);

National Bank of the Republic of Macedonia (2011) Quarterly Report July 2011;

National Bank of the Republic of Macedonia (2012) Quarterly Report July 2012;

National Bank of the Republic of Macedonia (2013a) Quarterly Report July 2013;

National Bank of the Republic of Macedonia (2013b) Quarterly Report October 2013;

National Bank of the Republic of Macedonia (2014a) Quarterly Report January 2014;

National Bank of the Republic of Macedonia (2014b) Quarterly Report October 2014;

OECD, The OECD Jobs Study: Facts, analyses, strategies, 1994;

State Statistical Office (2016d) News release on Business tendencies in retail trade, first, second, third and fourth quarter of 2016;

State Statistical Office (2016e) News release on Business tendencies in construction, first, second, third and fourth quarter of 2016;

State Statistical Office (2016f) News release on Average monthly net wage paid per employee, January-December 2016;

State Statistical Office (2016g) News release on Job vacancies, first, second, third and fourth quarter of 2016;

State Statistical Office (2016a) Labour Force Survey, Statistical Review: Population and Social Statistics, 2016;

State Statistical Office (2016b) Results from the Adult Education Survey, 2016;

State Statistical Office (2016c) News release on Business tendencies in manufacturing industry, January-December 2017.