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Commonalities and Differences in Labour Market Developments and Constraints in Different EU Regions

ABSTRACT

This paper provides a detailed overview of the differences across EU member states' labour markets, through the extensive use of descriptive statistics. The objective is two-fold: firstly, it identifies the commonalities and differences in rural labour markets across EU regions and their developments, with special regard to agriculture, and secondly it emphasises the constraints that may hinder the efficient functioning of labour markets. Therefore, the paper starts with a description of the main indicators in the general labour market theory, such as the structure of the population in terms of age and gender distribution, unemployment and activity rates, employment levels, quality of human capital, migration patterns, and so forth. Secondly, we focus on the differences among rural and urban areas to then look closely at the agricultural sector. The institutional framework in which labour market institutions operate is also included. Lastly, as an attempt to summarise the analysis and to classify the EU member states according to certain rural and specific agricultural indicators, cluster analysis is also employed. Policy implications include investment in human capital and vocational training, support to young farmers, promoting economic diversification and upgrading infrastructure, with special regard to the new member states and to the Southern parts of Europe.

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Commonalities and Differences in Labour Market Developments and Constraints in Different EU Regions

Barbara Tocco, Sophia Davidova and Alastair Bailey*

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1. Introduction

Rural regions in Europe are characterised by heterogeneous conditions due to socio-economic and geo-political differences. Some rural areas, especially those more remote, depopulated and dependent on agriculture, are the ones more at stake, as they face particular challenges in terms of growth, jobs and sustainability (European Commission, 2006). Despite some striking disparities of economic conditions across individual member states and groups of countries, in general rural areas show a lower degree of economic development than urban areas. The most important constraints and limitations concern low levels of income, an unfavourable demographic situation, low employment rates with high levels of unemployment, low human capital levels in terms of skills and training, and a lack of job opportunities especially for women and young people. With the two recent waves of enlargement of the European Union, in 2004 and 2007, the spatial heterogeneity of rural areas has been accentuated.

This study aims to provide an overview of the key patterns and trends over the last years in the European rural labour markets and in agriculture, showing the situation across the 27 member states and at the European level (EU-27). Through descriptive statistics, previous reports and academic papers, we focus on the main indicators suggested by the labour market theory, i.e. economic activity, employment and unemployment rates, structure of the population in terms of age and gender distribution, quality of human capital and migration patterns, providing some comparisons between rural and urban areas, across member states and groups of countries. Moreover, we include some welfare indicators, such as social protections systems and GDP per capita, to assess the levels of economic development and market opportunities across regions.

The analysis of data allows the identification of the commonalities and differences across the EU labour markets and thus to emphasise the constraints which characterise rural areas, with potential consequences for their competitiveness and economic growth. The stylised facts of rural areas include: lower activity rates especially in regards to women, older age working population, high unemployment levels (as well as hidden unemployment), pluriactivity, prevalence of part-time work with seasonal and casual labour, lower productivity of labour, and out-migration of the young and better educated individuals with implications for the remaining population in terms of age and human capital, particularly in those more remote and predominantly rural areas.

Therefore, a vicious circle is triggered, where the unfavourable demographic situation in rural areas and the low levels of education and training are coupled with low employment opportunities and lack of basic services and infrastructure, which altogether constitute a very unattractive environment for inward investment and entrepreneurship.

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2. Current trends and developments in labour markets

2.1 Population, labour force and unemployment

In 2009, the total population of the European Union (EU-27) reached 492 million, with a 3% increase in comparison to 2001 (Table 1). The population change has followed different trends across member states, with the largest increases in Southern and Western countries, and the largest decreases in the new member states (NMS). Activity rates have generally increased during the period 2001-09, with a few exceptions in the Czech Republic, Poland, Romania and Slovakia.

Table 1. Total Population, Activity Rates and Total Unemployment, 2001-2009

Country	Total Population (million)		Population Change (%)	Activity Rate (15-64) (%)		Total Unemployment Rate (%)	
	2001	2009	2001-2009	2001	2009	2001	2009
Belgium	10.3	10.8	5.2	64.2	66.9	6.6	7.9
Bulgaria	7.9	7.6	-3.5	62.5	67.2	19.5	6.8
Czech Republic	10.2	10.5	3.2	70.8	70.1	8	6.7
Denmark	5.3	5.5	3.7	79.9	80.7	4.5	6
Germany	81.3	81.0	-0.5	71.5	76.9	7.6	7.8
Estonia	1.4	1.3	-1.9	70.0	74.0	12.6	13.8
Ireland	3.9	4.5	15.8	68.6	70.2	3.9	11.9
Greece	10.5	10.8	3.2	63.3	67.8	10.7	9.5
Spain	40.4	45.7	13.0	64.7	73.0	10.3	18
France	57.7	61.1	5.9	68.7	70.6	8.3	9.5
Italy	57.2	59.8	4.4	60.6	62.4	9.1	7.8
Cyprus	0.7	0.8	13.2	70.6	74.0	3.8	5.3
Latvia	2.4	2.3	-4.4	67.7	73.9	12.9	17.1
Lithuania	3.5	3.3	-3.8	69.7	69.8	16.5	13.7
Luxembourg	0.4	0.5	11.1	64.4	68.7	1.9	5.1
Hungary	10.0	9.9	-1.7	59.6	61.6	5.7	10
Malta	0.4	0.4	5.3	58.1	59.0	7.6	7
Netherlands	15.8	16.2	2.4	75.8	79.7	2.5	3.7
Austria	8.0	8.2	3.5	71.0	75.3	3.6	4.8
Poland	38.1	37.2	-2.4	65.5	64.7	18.3	8.2
Portugal	10.3	10.6	3.4	72.1	73.7	4.6	10.6
Romania	22.3	21.5	-3.8	67.3	63.1	6.8	6.9
Slovenia	2.0	2.0	2.3	68.1	71.8	6.2	5.9
Slovakia	5.4	5.4	0.6	70.4	68.4	19.3	12
Finland	5.2	5.3	2.9	75.0	75.0	9.1	8.2
Sweden	8.9	9.3	4.6	77.9	78.9	5.8	8.3
United Kingdom	58.1	60.7	4.5	75.3	75.7	5	7.6
EU-27	477.9	492.3	3.0	68.6	71.0	8.5	9

Source: Own calculations based on Eurostat Database (2011a).

The EU-27 total unemployment rate stood at 9% in 2009, with much higher rates in Spain (18%) and in the Baltic countries (ranging from 13.7% to 17.1%). In comparison to 2001, many member states (MS) have experienced a sharp increase in their unemployment level, namely Ireland, Spain, Hungary, Portugal, and Latvia, whereas others have experienced a net improvement, especially Bulgaria, Poland, Slovakia and Lithuania. Although there is not a clear divide between the EU-15 and the NMS-12, it appears that the EU accession (or the expectation of accession) has improved the employment opportunities of some of the Central and Eastern European (CEE) countries.

One of the worrying facts about the EU is that in 2010 around 40% of the unemployed had been without work for 12 months or more (Eurostat, 2011a). In particular, the largest shares

of long-term unemployment (as a percentage of total unemployment), covering people unemployed for one year or more, are recorded by Slovakia (64%), Portugal (52.3%), Hungary (49.3%) and Ireland (49%).

2.2 Structure of employment by sector, gender and age group

In order to understand the functioning of labour markets across Europe, it is essential to have a look at the structure of employment in the various sectors of the economy. In 2007, employment in the primary sector, i.e. agriculture, hunting, forestry and fishing, represented 5.8% of the total employment for the EU-27 and was characterised by much higher shares in the NMS compared to the EU-15 (15.2% versus 3.4%), ranging from the lowest values in the UK (1.3%), Luxembourg (1.7%) and Belgium (1.9%), to the highest in Romania (30.3%), Bulgaria (19.7%) and Poland (14.7%) (Table 2). On the other hand, employment in the tertiary sector represented 68.1% of the total employment for the EU-27, with large disparities between the EU-15 and the NMS-12 (71.9% versus 51.3%). The lowest shares were recorded in Romania (38.8%), Bulgaria (52%) and Poland (54.6%), and the highest in Belgium (78%), the Netherlands (77%) and the UK (76.7%).

Table 2. Structure of Employment by Sector, 2007 (%)

Country	Employment in Primary Sector	Employment in Secondary Sector	Employment in Tertiary Sector
Belgium	1.9	20.1	78.0
Bulgaria	19.7	28.3	52.0
Czech Republic	3.6	38.1	58.3
Denmark	2.9	20.8	76.3
Germany	2.1	25.5	72.4
Estonia	4.6	34.4	61.0
Ireland	5.5	27.2	67.2
Greece	11.6	19.9	68.5
Spain	4.5	28.6	66.9
France	3.2	21.7	75.1
Italy	4.0	28.6	67.4
Cyprus	4.5	20.3	75.1
Latvia	9.7	28.1	62.2
Lithuania	10.3	30.5	59.1
Luxembourg	1.7	22.3	76.1
Hungary	7.8	32.1	60.1
Malta	2.6	24.7	72.9
Netherlands	3.1	19.9	77.0
Austria	5.7	27.3	67.0
Poland	14.7	30.6	54.6
Portugal	11.8	28.6	59.6
Romania	30.3	30.9	38.8
Slovenia	9.0	34.7	56.3
Slovakia	3.7	33.9	62.4
Finland	4.9	25.8	69.3
Sweden	2.2	22.7	75.1
United Kingdom	1.3	22.0	76.7
EU-27	5.8	26.1	68.1
EU-15	3.4	24.7	71.9
NMS-12	15.2	31.6	53.1

Source: European Commission (2010a)

In 2009, the employment rate in the European Union reached 64.6%, ranging from the lowest percentages in some of the NMS, such as Malta (54.9%), Hungary (55.4%), Romania (58.6%) and Poland (59.3%), and in a few Southern countries, namely Italy (57.5%) and Spain (59.8%), to the highest levels in the North-West of Europe, for instance the Netherlands (77%), Denmark (75.7%), Sweden (72.2%) and Germany (70.9%) (Table 3). Although on average there has been a slight increase in comparison to 2001, with major improvements in Bulgaria, Poland, Slovenia, Slovakia and Greece, other MS have worsened their employment rates, as it was the case for Ireland, Portugal and Romania.

Table 3. Employment Rates: Breakdown by Gender and Age Group, 2001-2009 (%)

Country	Employment Rates by Gender (15 to 64 years)						Employment Rates by Age Group					
	Total		Male		Female		15-24		25-54		55-64	
	2001	2009	2001	2009	2001	2009	2001	2009	2001	2009	2001	2009
Belgium	59.9	61.6	68.8	67.2	51.0	56.0	29.7	25.3	76.6	79.8	25.1	35.3
Bulgaria	49.7	62.6	52.7	66.9	46.8	58.3	19.8	24.8	67.2	79.2	24.0	46.1
Czech Republic	65.0	65.4	73.2	73.8	56.9	56.7	34.2	26.5	82.1	82.5	37.1	46.8
Denmark	76.2	75.7	80.2	78.3	72.0	73.1	62.3	63.6	84.4	85.1	58.0	57.5
Germany	65.8	70.9	72.8	75.6	58.7	66.2	47.0	46.2	79.3	81.6	37.9	56.2
Estonia	61.0	63.5	65.0	64.1	57.4	63.0	28.1	28.9	76.0	76.4	48.5	60.4
Ireland	65.8	61.8	76.6	66.3	54.9	57.4	49.3	35.4	76.3	72.0	46.8	51.0
Greece	56.3	61.2	71.4	73.5	41.5	48.9	26.2	22.9	70.6	75.4	38.2	42.2
Spain	57.8	59.8	72.5	66.6	43.1	52.8	34.0	28.0	69.5	70.7	39.2	44.1
France	62.8	64.1	69.7	68.4	56.0	60.0	29.5	31.2	79.4	82.0	31.9	38.8
Italy	54.8	57.5	68.5	68.6	41.1	46.4	26.3	21.7	69.2	71.9	28.0	35.7
Cyprus	67.8	69.9	79.3	77.6	57.2	62.5	38.4	35.5	80.8	82.6	49.1	56.0
Latvia	58.6	60.9	61.9	61.0	55.7	60.9	28.8	27.7	75.4	74.7	36.9	53.2
Lithuania	57.5	60.1	58.9	59.5	56.2	60.7	22.7	21.5	74.1	76.3	38.9	51.6
Luxembourg	63.1	65.2	75.0	73.2	50.9	57.0	32.3	26.7	78.7	81.2	25.6	38.2
Hungary	56.2	55.4	62.9	61.1	49.8	49.9	30.7	18.1	73.1	72.9	23.5	32.8
Malta	54.3	54.9	76.2	71.5	32.1	37.5	52.3	44.0	61.0	68.0	29.4	27.9
Netherlands	74.1	77.0	82.8	82.4	65.2	71.5	70.4	68.0	82.8	86.3	39.6	55.1
Austria	68.5	71.6	76.4	76.9	60.7	66.4	51.3	54.5	82.9	84.0	28.9	41.1
Poland	53.4	59.3	59.2	66.1	47.7	52.8	24.0	26.8	69.2	77.6	27.4	32.3
Portugal	69.0	66.3	77.0	71.1	61.3	61.6	42.9	31.3	82.3	79.7	50.2	49.7
Romania	62.4	58.6	67.8	65.2	57.1	52.0	32.6	24.5	76.6	73.7	48.2	42.6
Slovenia	63.8	67.5	68.6	71.0	58.8	63.8	30.5	35.3	83.6	84.8	25.5	35.6
Slovakia	56.8	60.2	62.0	67.6	51.8	52.8	27.7	22.8	74.8	77.8	22.4	39.5
Finland	68.1	68.7	70.8	69.5	65.4	67.9	41.8	39.6	81.5	82.4	45.7	55.5
Sweden	74.0	72.2	75.7	74.2	72.3	70.2	44.2	38.3	84.6	84.5	66.7	70.0
United Kingdom	71.4	69.9	78.0	74.8	65.0	65.0	56.6	48.4	80.4	80.2	52.2	57.5
EU-27	62.6	64.6	70.9	70.7	54.3	58.6	37.5	35.1	76.2	78.2	37.7	46.0

Source: Own calculations based on Eurostat Database (2011a).

In terms of breakdown by gender, female employment is much lower compared to the male average, i.e. 58.6% versus 70.7% at the EU-27 level, with the exception of Lithuania. Since 2001, some improvements in employment rates have occurred, mainly due to an increase in female employment. The most important developments have occurred in Bulgaria, with an increase in both male and female employment, and in Spain, where the female employment rate has significantly improved, at the expense of the male rate. Overall, the larger disparities between female and male employment rates occur in Malta (37.7% versus 71.5%), Greece (48.9% versus 73.5%) and Italy (46.4% versus 68.6%).

Looking at the different age groups, 78.2% of the Europeans in the 25-54 age category are employed, followed by 46% in the 55-64, and lastly 35.1% in the 15-24. This would suggest that young people are generally suffering from low employment levels, especially in the Southern-Eastern countries, in particular in Hungary, Lithuania, Italy, Slovakia, Greece and Romania. It is striking to observe how the employment rates for the young age category (15-

24) have decreased over the period 2001-09, especially in Ireland, Hungary, Malta and Portugal, whereas general improvements have occurred for older age groups, most importantly for the group (55-64), particularly in Bulgaria, Germany, Slovakia and Latvia.

2.3 Disparities among member countries: Wages and social protection policies

In 2009, nearly 80 million Europeans lived below the poverty line[1], equal to 16% of the population, with a large proportion facing serious difficulties in accessing employment, education, housing, social and financial services (TNS Opinion & Social, 2010b). Within the EU-27, the share of population at risk of poverty was high in Latvia, Romania, Bulgaria and Lithuania; in the EU-15, particularly high rates were given by Greece and Spain. Moreover, poverty in rural areas (i.e. thinly populated areas)[2] is a widespread phenomenon throughout the EU and is much higher compared to more urban regions; as a consequence, it is prevalent in the NMS-12 and in the Southern countries (Spain, Italy and Greece) (European Commission, 2011b). According to the 2010 Eurobaromer report, surveying Europeans' perceptions on poverty and social exclusion in Europe, the reasons for poverty in the society are a consequence of unemployment and low wages, whereas the personal factors that would lead to poverty are a lack of education, low levels of training or skills and inherited poverty (TNS Opinion & Social, 2010b).

Referring to the Eurostat (2010b), among the member states there are wide disparities in terms of labour pay: in 2007, average annual gross earnings[3] were higher in the North-West MS, in particular Denmark (€53,165), the UK (€46,051), and Luxembourg (€45,284), followed by Southern countries, and lastly Baltic member states and Eastern countries, with Romania (€4,828) and Bulgaria (€2,626) at the very extreme. By the same token, Latvia, Lithuania, Bulgaria and Romania also had the highest shares of low wage earners. Disparities in earnings across EU members are also reflected by the differences in the provision of national minimum wages, with the Benelux countries and Ireland recording the highest levels in 2009 (on average €1,468 per month), in comparison to the lowest in Bulgaria and Romania (on average €138 per month).

Social protection systems are highly developed in the EU-27, accounting for over a quarter (26%) of GDP in 2008[4]. These social benefits focus on a set of risks or needs and are associated with unemployment (including vocational training), sickness and healthcare, family and children, housing, old age (including pensions), disability, the loss of a family member and social exclusion. The level of expenditure on social protection is an indicator of national welfare and economic development and reflects differences in socio-demographic trends, unemployment rates and institutional factors (Eurostat, 2010b). The highest reported share was 30% of GDP for France, followed by Denmark, Sweden, Netherlands, Belgium, Austria and Germany, all above the EU-27 average. On the other hand, the lowest social protection expenditure shares were in Latvia, Romania, Bulgaria, and Estonia with around 15% of GDP. In general, all the NMS had shares below 20%, with the exception of Hungary and Slovenia. Within the EU-27, the largest expenditures on social protection, representing 70% of the total amount, included old age benefits (for example pensions) and

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[1] In order to quantify the number of poor people in the EU-27, relative poverty is measured in relation to the general level of income in a society. People are at risk of poverty when their income is less than 60% of the median household income (http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Living_conditions_statistics).

[2] In this particular context, rural areas are defined as thinly populated areas, or when there are less than 100 inhabitants/km².

[3] Gross annual earnings refer to full-time employees working in industry and services.

[4] Eurostat online – total expenditure on social protection (http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=tps00098)

sickness/healthcare benefits, accounting respectively for 39.1% and 29.6% in 2008, followed by the other categories: family (8.2%), disability (8.07%), loss of a family member (6.2%), unemployment (5.1%), housing (2.05%) and social exclusion (1.4%).

In terms of labour market policy interventions, which are mainly targeted at providing assistance to those groups of people who are unemployed and/or face difficulties in participating in the labour market, the highest levels were recorded in Belgium, Spain, Ireland and Denmark, with over 3% of GDP in 2009. On the other hand, the lowest values were reported in Romania, Malta, Bulgaria, the UK and the Czech Republic, with expenditures ranging from 0.4% to 0.6% of GDP[5].

2.4 Labour market mobility and incentives

The free movement of people and labour is one of the basic rights of EU citizens and symbolises European integration. According to the 2010 Eurobarometer (TNS Opinion & Social, 2010a), the geographical and labour market mobility within Europe tends to be low. The survey, which was carried out at the end of 2009 and was focused on the population over 15 years of age, revealed that slightly more than 2% of EU citizens were living in another MS, in comparison to approximately 4% of non-EU nationals residing in the EU-27. Overall, only 10% of Europeans have lived and worked abroad (EU and/or non EU countries) at some point in their life. The results suggest that people residing in the NMS are more inclined to migrate and work abroad. On the whole, demographic patterns show that younger, male and those in single households are more inclined to move. Past experience, such as to have already studied or worked abroad, or to know people who had done so, appears to have the strongest impact on the future intentions to migrate. At the EU-27 level, the primary reasons to migrate to a specific country include, in order of importance, economic and financial incentives (i.e. the possibility to earn more money), cultural factors (or enjoying the mentality), knowledge of the language, and the enjoyable lifestyle of the country. Other secondary reasons include employment opportunities in that country, social connections such as family or friends already living/working in that country, the willingness to improve the language skills, geographical proximity, the quietness, security and political stability of the country, etc. Nonetheless, there are significant disparities across MS and in particular between the EU-15 and the NMS-12. Whereas the former are more attracted by lifestyle and cultural factors, the latter are driven by economic considerations.

Furthermore, unemployment represents a powerful driver for migration, as almost half of the Europeans would consider moving to other regions or countries if they became unemployed or were unable to find a job where they live. Nonetheless, a comparison with the Eurobarometer carried out in 2005 would suggest that this percentage has considerably decreased (from 66% to 48%). The main differences concern the destination of migration: whereas citizens in the EU-15 are more willing to move to regions in their own country, residents in the NMS-12 would only consider moving to a foreign country, as supported by their low internal mobility rates. Therefore, residents in the NMS have a higher propensity to migrate to another country, driven by the belief that the chances to find a job (and/or a better paid job) are greater abroad, with the most motivated part of the population being the young and the most educated. In particular, those who have already lived or worked abroad, or who have family or friends that already had a similar experience, are more inclined to migrate. Citizens of the NMS-12, especially from the Eastern countries, exhibit a higher propensity to take up seasonal work than individuals from the EU-15. At the EU level, the encouraging factors for working abroad include the prospects for a better quality of life, followed by better working conditions and better career opportunities. The EU-15 are more encouraged by career or business opportunities, and are generally more attracted to the idea of meeting new people and discovering new things, whereas the NMS-12 priorities include prospects for a

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5 Eurostat online – LMP expenditure by type of action (http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lmp_expsumm&lang=en)

better quality of life, better social and health care, and better working conditions. On the other hand, the main discouraging factors for migrating to another country are: leaving home, leaving family and friends, imposing changes on their families, and learning a new language.

3. Rural labour markets and disparities with urban areas

3.1 The importance of rural areas

Since there is not a unique and internationally accepted definition of 'rural' areas, for our descriptive purpose we rely on the new EU typology which classifies EU regions into predominantly rural (PR), intermediate rural (IR) and predominantly urban (PU) [6].

According to the report of the European Commission (2010), in 2007 rural areas represented 91% of the total territory and 59% of the total population in the EU-27, with predominantly rural areas alone accounting respectively for 57% of the territory and 24% of the population (Table 4).

Table 4. The Importance of Rural Areas: Territory, Population, GVA, Employment, 2007 (%)

	Territory			Population			GVA			Employment		
Country	PR	IR	PU	PR	IR	PU	PR	IR	PU	PR	IR	PU
Belgium	33.8	31.8	34.4	8.7	23.9	67.5	5.5	18.9	75.6	6.8	20.5	72.7
Bulgaria	53.6	45.1	1.2	39.0	44.9	16.2	27.0	36.6	36.4	35.3	41.8	22.9
Czech Republic	48.3	37.1	14.6	33.3	43.6	23.1	27.8	36.5	35.7	32.2	40.2	27.6
Denmark	71.8	27.0	1.2	42.9	36.0	21.2	38.8	31.4	29.8	40.6	32.6	26.7
Germany	39.8	48.4	11.8	17.5	40.0	42.5	14.7	35.9	49.5	15.8	38.3	45.9
Estonia	82.3	17.7		48.3	51.7		32.6	67.4		42.5	57.5	
Ireland	98.7		1.3	72.3		27.7	59.5		40.5	68.0		32.0
Greece	82.2	12.1	5.6	43.2	10.5	46.3	32.5	8.8	58.6	40.8	10.8	48.4
Spain	46.1	39.5	14.4	13.3	38.2	48.4	10.7	35.6	53.6	12.0	36.6	51.4
France	64.6	27.3	8.1	28.7	35.7	35.6	23.2	31.3	45.5	26.6	34.1	39.2
Italy	45.5	42.3	12.3	20.5	43.9	35.6	18.6	42.6	38.9	19.4	43.5	47.2
Cyprus		100.0			100.0			100.0			100.0	
Latvia	62.8	21.1	16.1	38.4	13.4	48.2	23.0	10.3	66.8	35.4	13.0	51.7
Lithuania	65.0	19.9	15.0	43.6	31.2	25.1	29.9	30.7	39.4	41.2	31.4	27.4
Luxembourg		100.0			100.0			100.0			100.0	
Hungary	66.3	33.1	0.6	47.5	35.6	16.9	34.9	28.4	36.7	44.0	31.5	24.5
Malta			100.0			100.0			100.0			100.0
Netherlands	2.2	51.5	46.3	0.7	28.2	81.1	0.8	25.4	73.8	0.6	26.1	73.3
Austria	72.2	18.9	8.8	39.4	26.5	34.1	30.5	28.8	40.7	n.a	n.a	n.a
Poland	55.6	43.5	9.9	37.9	33.8	28.3	27.3	30.9	41.8	35.2	31.9	32.9
Portugal	84.1	8.7	7.3	36.3	15.2	48.4	31.1	11.5	57.4	36.8	14.7	48.6
Romania	59.3	39.9	0.8	45.9	43.8	10.4	33.8	43.2	23.0	42.2	46.4	11.4
Slovenia	61.0	39.0		43.8	56.2		36.5	63.5		40.3	59.7	
Slovakia	59.0	36.8	4.2	50.4	38.3	11.3	40.5	32.8	26.7	44.3	36.4	19.3
Finland	83.3	14.6	2.1	43.2	30.7	26.1	36.2	28.0	35.8	39.7	29.2	31.1
Sweden	52.6	45.8	1.6	22.7	56.2	21.1	20.0	51.7	28.3	21.4	54.4	24.2
United Kingdom	27.4	47.0	25.6	2.9	26.0	71.1	2.0	22.2	75.8	2.3	26.0	71.7
EU-27	56.6	34.3	9.2	23.7	35.5	40.9	16.6	31.8	51.6	21.4	34.6	44.0
EU-15	56.0	33.9	10.1	19.2	34.6	46.2	15.7	31.4	52.9	17.3	33.7	49.0
NMS-12	58.4	35.3	6.3	40.8	38.6	20.6	29.8	36.1	34.1	37.6	37.9	24.5

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

[6] The new EU typology of classification differs from the previous OECD methodology. In this paper, the tables and data referring to rural areas follow this classification, as extracted from the European Commission (2010) *Rural Development in the European Union, Statistical and Economic Information, Report 2010*. For further clarification on the new methodology see also: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Urban-rural_typology

In terms of territory, the importance of rural areas varies across MS, from the more rural zones, such as Ireland, Slovenia and Finland, to the more urban ones, namely Belgium and the Netherlands. Moreover, in 2007, rural areas generated 48% of the gross value added (GVA) in the EU-27 and provided 56% of the employment. Some disparities emerged when comparing rural areas in the EU-15 with the NMS-12: in terms of territory (90% versus 93.7%), population (53.8% versus 79.4%), gross value added (47.1% versus 65.9%) and employment share (51% versus 75.5%), meaning that rural areas are particularly important to the NMS, especially in terms of the percentage of population residing in these areas and the employment level. An important feature of rural areas, especially predominantly rural areas, is demographic ageing, as the population of Southern countries, mainly Portugal, Spain, Greece, and Italy, have a high proportion of people over 65. As emphasised by the European Commission (2006), demographic ageing in rural areas is an important issue, as it not only alters the composition of the labour force, reducing future labour supply and employment levels, but also places a great burden on public finances, thus hindering economic development.

3.2 Economic development

The level of economic development, measured by GDP per capita in purchasing power standards (% of EU-27 = 100), varies across countries, typically exhibiting levels in rural areas that are well below those in urban areas (Table 5). This pattern is particularly evident in the NMS, where GDP per capita in predominantly rural areas is only 40% of the EU-27 average and is also less than half (45%) of the NMS-12 level in urban areas. The disparities are even wider in Romania, Hungary, Slovakia, Bulgaria and Latvia. Furthermore, since over the last few years economic growth in rural areas has been slower compared to urban areas, disparities between rural and urban regions have been increasing (European Commission, 2010a). In rural areas, and especially in those regions where agriculture represents a high share of total employment, GDP per capita tends to be low, which is the case for Romania, Bulgaria, Latvia and Poland. The availability of infrastructure and basic services in rural areas is crucial for the economic development and quality of life. A vicious circle is then triggered as the low levels of income are not sufficient to retain or attract skilled individuals, which are instead attracted to migrate towards richer regions with higher levels of GDP per capita and higher standards of living. In the latter, easier access to capital and investment imply better employment opportunities, accompanied by greater access to services, which altogether entail higher value added generated by the service sector (European Commission, 2006).

According to a study conducted by the European Commission (2010b), the main contributor to GDP per capita in rural areas is the growth in labour productivity. Hence, labour productivity is crucial for economic growth and social development in rural areas, with important consequences for the competitiveness and the living standards in these regions. As labour productivity represents the efficiency in production, disparities among regions arise due to differences in natural resources (land and its quality), the balance of the factors of production (labour and capital), the technology and infrastructure, and the human capital. In 2005, labour productivity in urban areas was twice as high as the productivity in predominantly rural areas (European Commission, 2010b). Overall, the NMS-12 had significantly lower levels of labour productivity in predominantly rural and intermediate rural areas compared to the EU-15, although during the period 1999-2005 their labour productivity growth was faster, driving the economic development of the most dynamic regions.

Table 5. Economic Development, GDP (PPS) per Capita (EU-27=100), 2006

Country	PR	IR	PU	National Value
Belgium	74	93	131	117
Bulgaria	28	32	80	38
Czech Republic	65	65	119	78
Denmark	111	137	126	123
Germany	97	104	136	116
Estonia	44	86		66
Ireland	120		211	145
Greece	70	78	116	92
Spain	83	97	115	104
France	87	96	140	109
Italy	93	100	115	104
Cyprus		91		91
Latvia	29	40	73	52
Lithuania	39	55	86	56
Luxembourg		267		267
Hungary	46	50	136	63
Malta			77	77
Netherlands	153	118	136	131
Austria	96	135	149	124
Poland	38	48	77	53
Portugal	67	59	93	79
Romania	28	38	85	38
Slovenia	74	99		88
Slovakia	51	54	152	64
Finland	96	106	158	114
Sweden	108	113	168	123
United Kingdom	81	103	127	120
EU-27	72	90	125	23.733
EU-15	91	102	129	112
NMS-12	40	50	89	54

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

3.3 Rural employment structure and recent developments

In terms of the share in total employment, the tertiary sector is on average the largest of the three sectors across the EU-27. In 2007 it accounted for 57% of the total employment in predominantly rural areas and 65% in intermediate rural areas in comparison to 76% in urban areas (Table 6). The share of employment in this sector is much higher in the EU-15 in comparison to the NMS-12 and the disparity increases if we move to predominantly rural regions, i.e. almost 20 percentage points difference in predominantly rural areas as opposed to 8 percentage points in urban areas. In particular, in predominantly rural regions in 2007, some of the NMS, especially Romania, Bulgaria, Poland and Slovenia, had less than 45% of the people employed in the tertiary sector, while the predominantly rural areas of Belgium, the UK and Sweden had more than 70% of the people engaged in this sector. The other main difference between the NMS-12 and the EU-15 is the share of employment in the primary sector in rural areas, with 15 percentage points difference in predominantly rural areas and 11 percentage points difference in intermediate rural areas. The primary sector in predominantly rural areas represents an important share of employment in Romania, Bulgaria, Poland, Lithuania, Latvia and Slovenia, as well as for some of the Southern countries, such as Greece and Portugal. It is also important in some of the intermediate rural regions of these countries, whereas it provides only a minority of employment in the Western member states.

Table 6. Structure of Employment in Rural and Urban Areas, 2007 (%)

Country	PR			IR			PU		
	primary sector	secondary sector	tertiary sector	primary sector	secondary sector	tertiary sector	primary sector	secondary sector	tertiary sector
Belgium	5.6	21.6	72.7	3.0	25.0	72.0	1.2	18.6	80.2
Bulgaria	28.8	29.7	41.4	21.5	31.5	47.0	2.3	20.5	77.2
Czech Republic	5.6	43.7	50.7	3.2	40.8	56.0	1.9	27.5	70.6
Denmark	4.6	26.8	68.6	2.9	20.8	76.3	0.3	11.4	88.3
Germany	4.6	31.7	63.7	2.6	27.4	70.0	0.9	21.7	77.4
Estonia	9.0	34.7	56.2	1.4	34.1	64.6			
Ireland	7.9	31.1	61.0				0.5	19.0	80.5
Greece	23.6	18.9	57.4	13.2	18.2	68.6	1.1	21.1	77.8
Spain	11.9	28.8	59.3	5.9	30.6	63.5	1.7	27.3	71.0
France	6.1	25.5	68.5	3.3	23.7	73.0	1.2	16.8	81.9
Italy	7.9	29.2	62.8	4.6	31.4	64.0	1.3	25.0	73.7
Cyprus				4.5	20.3	75.1			
Latvia	16.2	27.6	56.1	14.4	28.0	57.6	4.1	28.4	67.4
Lithuania	17.0	30.9	52.1	7.7	32.5	59.8	3.3	27.9	68.8
Luxembourg				1.7	22.3	76.1			
Hungary	11.2	35.9	52.9	8.8	35.1	56.2	0.6	21.5	77.9
Malta							2.6	24.7	72.8
Netherlands	5.3	27.3	67.5	5.3	24.3	70.5	2.3	18.3	79.4
Austria	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a
Poland	27.4	28.7	43.9	12.0	32.2	55.7	3.8	31.1	65.0
Portugal	23.2	24.3	52.4	13.3	42.1	44.6	2.7	27.9	69.5
Romania	38.9	29.0	32.1	29.6	32.9	37.5	1.1	29.6	69.2
Slovenia	13.4	41.8	44.8	6.1	29.9	64.0			
Slovakia	5.4	36.1	58.5	3.0	38.4	58.6	1.0	20.4	78.7
Finland	8.6	27.8	63.6	4.5	30.4	65.1	0.6	19.0	80.4
Sweden	3.8	25.9	70.3	2.4	24.8	72.8	0.4	15.1	84.5
United Kingdom	7.1	21.6	71.3	2.4	24.0	73.6	0.7	21.2	78.0
EU-27	14.2	29.1	56.7	6.3	28.6	64.9	1.4	22.4	76.2
EU-15	8.8	27.5	63.7	3.8	27.3	68.8	1.2	21.7	77.1
NMS-12	23.7	32.0	44.3	14.9	33.6	51.5	2.8	28.0	69.2

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

During the period 2002-07, the share of employment in the primary sector in rural areas has decreased, with major declines across the NMS-12, in particular in Lithuania, Latvia, Romania, Poland and Bulgaria. Exceptions are Hungary and Malta, which have instead experienced slight increases (Table 7). On the other hand, the development of the tertiary sector has seen the largest increases in predominantly rural areas of some of the NMS-12, such as Lithuania, Latvia, Slovenia and Poland, and in some of the Southern countries, namely Greece, Portugal and Spain. The secondary sector has decreased at the EU-27 level, whereas it has followed a positive trend across most of the NMS with the largest increases in rural areas, especially those predominantly rural. Nonetheless, rural regions are still very reliant on the primary sector and are lagging behind in terms of economic performance and productivity due to the limited expansion of the tertiary sector.

Table 7. Developments in Rural Employment Structure, 2002-2007 (%)

Country	PR			IR			PU			National Value		
	primary sector	secondary sector	tertiary sector	primary sector	secondary sector	tertiary sector	primary sector	secondary sector	tertiary sector	primary sector	secondary sector	tertiary sector
Belgium	-0.8	-0.3	1.1	-0.4	-1.6	2.1	-0.2	-2.0	2.1	-0.3	-1.8	2.0
Bulgaria	1.5	-0.1	-1.3	-8.1	4.4	3.7	-2.3	-3.0	5.3	-4.2	1.0	3.3
Czech Republic	-1.3	-0.6	2.0	-0.5	-0.5	1.0	-0.4	-0.6	1.0	-0.7	-0.7	1.4
Denmark	-0.7	-1.4	2.0	-0.5	-1.1	0.2	0.1	-1.0	0.8	-0.4	-1.3	1.7
Germany	-0.5	-1.2	1.7	-0.2	-2.0	2.2	0.0	-2.6	2.7	-0.2	-2.2	2.3
Estonia	-4.3	4.3	0.0	-0.5	2.8	-2.3				-2.2	3.4	-1.3
Ireland	-2.2	-0.4	2.5				-0.2	-1.7	1.9	-1.4	-0.7	2.1
Greece	-5.4	0.4	5.0	-5.3	-0.4	5.7	-0.5	-0.9	1.4	-3.6	-0.3	3.8
Spain	-3.5	0.1	3.4	-1.9	-0.5	2.4	-0.6	-2.0	2.6	-1.4	-1.2	2.6
France	-0.6	-1.2	1.8	-0.3	-1.6	1.9	-0.1	-1.2	1.3	-0.3	-1.4	1.7
Italy	-1.1	-0.3	1.4	-0.6	-0.2	0.8	-0.1	-0.8	0.9	-0.5	-0.5	1.0
Cyprus				-1.6	0.4	1.1				-1.6	0.5	1.2
Latvia	-8.8	3.9	4.9	-7.2	3.2	3.9	-2.4	3.7	-1.3	-5.3	3.7	1.6
Lithuania	-10.4	3.6	6.8	-5.3	4.9	0.4	-4.3	0.7	3.6	-7.5	3.2	4.2
Luxembourg				0.2	-0.1	-0.1				0.2	-0.1	-0.1
Hungary	3.2	-3.1	-0.1	1.4	-0.3	-1.1	-0.1	-1.5	1.6	1.8	-2.1	0.3
Malta							0.2	-4.4	4.3	0.2	-4.4	4.4
Netherlands	-0.6	-3.2	3.8	-0.6	-2.1	2.8	-0.3	-1.8	2.0	-0.4	-1.9	2.2
Austria	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	n.a	0.0	-2.0	2.0
Poland	-6.3	3.2	3.1	-4.0	2.8	1.2	-1.8	-0.4	2.2	-4.6	2.0	2.6
Portugal	-1.5	-2.0	3.5	-0.6	-3.2	3.8	0.0	-3.9	3.9	-0.5	-3.1	3.6
Romania	-5.1	2.3	2.7	-4.7	0.7	4.0	-0.4	-5.0	5.4	-5.1	0.8	4.2
Slovenia	-2.4	-0.9	3.4	-1.2	-1.8	3.0				-1.8	-1.7	3.5
Slovakia	-1.7	1.2	0.5	-1.3	-0.5	1.8	-0.4	-2.4	2.8	-1.3	-0.2	1.6
Finland	-1.0	-0.3	1.4	-0.4	-2.2	2.6	0.0	-0.6	0.7	-0.5	-0.9	1.4
Sweden	-0.4	-0.3	0.7	-0.5	-1.7	2.2	-0.1	-1.2	1.3	-0.4	-1.3	1.7
United Kingdom	0.4	-2.0	1.6	0.2	-2.1	1.9	0.1	-2.0	1.9	0.0	-2.0	2.0
EU-27	-2.4	0.0	2.3	-1.2	-0.7	2.0	-0.2	-1.7	1.9	-1.1	-1.0	2.1
EU-15	-1.3	-0.8	2.1	-0.5	-1.4	1.8	-0.1	-1.8	1.9	-0.4	-1.5	1.9
NMS-12	-4.1	1.6	2.5	-3.8	1.3	2.5	-1.4	-1.1	2.5	-3.7	0.8	2.9

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

In terms of employment levels, rural areas exhibited lower employment rates compared to urban areas, especially when comparing predominantly rural areas to predominantly urban areas (Table 8). Larger disparities were observed in the NMS-12, with 14 percentage points difference among regions, in comparison to 9.4 percentage points difference for the EU-27 on average. In the period 2003-07, employment increased faster in urban areas, which suggests a widening of the urban-rural employment rate gap. It is striking to look at the huge gap in the NMS-12, with employment growth in predominantly urban areas much higher compared to rural areas (8.4% in urban areas compared to 1.5% in predominantly rural areas and 2.4% in intermediate rural areas).

Table 8. Employment Rates in Rural and Urban Regions, 2003-2007 (%)

Country	Employment Rates			Change in Employment Rate (2003-2007)		
	PR	IR	PU	PR	IR	PU
Belgium	49.4	53.3	67.5	0.57	1.46	1.72
Bulgaria	64.1	65.3	94.0	7.64	3.14	20.33
Czech Republic	69.1	65.6	85.3	2.92	1.74	4.06
Denmark	66.1	92.5	96.9	n.a	n.a	n.a
Germany	66.9	69.7	78.1	2.20	2.14	1.81
Estonia	65.0	79.4		3.10	7.77	
Ireland	66.2		79.3			
Greece	61.3	64.8	63.5	-1.78	3.49	2.38
Spain	63.3	64.4	70.7	3.87	5.68	5.06
France	59.9	59.2	66.8	-0.50	0.08	1.21
Italy	61.2	63.9	67.1	1.64	1.21	1.60
Cyprus		71.0			n.a	
Latvia	65.3	69.3	75.4	8.53	7.57	7.55
Lithuania	63.6	66.0	69.7	2.60	5.66	6.01
Luxembourg		64.2			n.a	
Hungary	55.9	53.4	87.1	2.17	5.41	7.42
Malta			54.6			n.a
Netherlands	57.5	57.1	62.5	-2.52	1.08	1.41
Austria	66.6	83.1	76.6	2.21	3.95	1.22
Poland	53.0	52.8	64.4	1.90	5.29	8.54
Portugal	75.0	67.8	70.7	-0.82	-0.59	-0.95
Romania	58.5	65.5	64.7	-2.29	-3.14	7.05
Slovenia	62.7	72.7		1.00	3.98	
Slovakia	49.4	53.6	92.8	0.73	0.92	7.99
Finland	66.8	68.3	80.7	3.36	2.46	3.28
Sweden	72.5	73.5	84.0	0.27	0.43	-0.68
United Kingdom	73.9	74.9	71.0	-0.07	-1.97	-2.03
EU-27	61.6	65.0	71.0	1.20	1.77	1.95
EU-15	64.1	66.5	71.0	0.96	1.54	1.11
NMS-12	57.5	60.3	71.6	1.49	2.39	8.41

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

The fact that unemployment rates are significantly higher in rural than in urban areas mainly reflects the demand side characteristics of rural areas, their economic structure and their competitiveness. Moreover, long-term unemployment is relatively high in predominantly rural areas, which may imply social exclusion of low-income groups. On the other hand, there might be a second-order effect on the supply side due to the 'worker discouragement effect' with the consequence of reducing those individuals from the unemployment group to the economically inactive category (Copus et al., 2006). Hidden unemployment, including those unemployed persons not captured by unemployment statistics, may include discouraged workers and can be manifested in underemployment and low productivity. According to the European Commission (2006), hidden unemployment in rural areas accounts for around 5 million people. In this respect, and as emphasised by several studies, agriculture plays a role of social buffer in absorbing rural labour during transition (Dries and Swinnen, 2002; Swinnen et al., 2005).

3.4 Human capital

The quality of human capital in a region is an important indicator of the knowledge and skills of people, which are essential for the economic performance and competitiveness of that region. In 2009, 72% of adults in the EU attained medium or high education (upper

secondary education or above), with a 5 percentage points difference between predominantly rural areas and urban ones (Table 9).

Table 9. Adults with Medium or High Educational Attainment, 2009 (%)

Country	PR	IR	PU	National Value
Belgium	69.1	70.7	70.9	70.57
Bulgaria	75.4	78.7	89.6	77.92
Czech Republic	92.2	89.2	94.1	91.40
Denmark	74.4	73.0	79.7	74.07
Germany	86.9	86.6	82.8	85.28
Estonia	90.3	87.0		88.90
Ireland	69.4		70.6	69.20
Greece	57.3	60.1	73.6	61.23
Spain	48.3	49.9	57.6	51.48
France	69.4	70.2	71.8	69.77
Italy	55.6	53.5	56.9	54.30
Cyprus		73.3		72.41
Latvia	87.1	94.1	83.3	86.77
Lithuania	n.a	n.a	n.a	91.32
Luxembourg		81.6		75.49
Hungary	77.6	84.8	77.7	80.57
Malta			28.2	27.72
Netherlands	69.9	71.8	70.8	72.84
Austria	83.4	84.7	82.1	81.87
Poland	87.0	87.9	89.8	87.97
Portugal	25.8	21.9	36.6	29.90
Romania	73.3	72.9	86.9	74.68
Slovenia	82.3	84.7		83.28
Slovakia	91.3	89.6	94.2	90.94
Finland	81.3	82.7	82.9	81.97
Sweden	84.6	84.1	88.5	80.25
United Kingdom	83.0	87.6	85.6	73.93
EU-27	71.1	72.8	76.3	71.75
EU-15	66.2	69.9	74.8	68.49
NMS-12	82.1	83.6	88.0	83.92

Note: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

Source: European Commission (2010a)

Whereas skills and human capital were generally lower in rural areas, wide disparities were observed in the NMS-2, i.e. Bulgaria and Romania, as well as in some of the Southern countries, such as Greece, Spain and Portugal. At the national level, the NMS-12 have on average a higher share of medium or high educational attainment compared to the EU-15 (84% versus 68%) and such disparity was particularly striking in rural areas (both predominantly and intermediate). Differences in educational attainment highlight the disparities in the quality of human capital, which more and less follow a geographic pattern, ranging from the lowest percentages in Southern countries, such as Malta (28%), Portugal (30%), Spain (51%), Italy (54%) and Greece (61%), to the highest shares in Eastern and Baltic member states, namely the Czech Republic (91%), Lithuania (91%), Slovakia (91%), Estonia (89%) and Poland (88%).

3.5 Net migration

The net migration rate, i.e. the difference between immigration and emigration, is an important indicator to assess the 'attractiveness' of an area (European Commission, 2010a). Therefore, while comparing migration patterns across MS, i.e. at the international level, it is even more informative to look at the different types of areas within countries, looking at the

rural-urban migration (Table 10). At a first glance, net migration rates are generally lower in predominantly rural areas (especially in Latvia, Lithuania and Bulgaria) and higher in urban areas (with the highest values in the Czech Republic and Spain). A worth mentioning exception is Ireland, which displays a net migration rate which is much higher in predominantly rural areas than in urban areas. Differences among the EU-15 and the NMS suggest that migration towards the EU-15 is higher compared to the NMS-12 for all types of regions (rural, intermediate and urban), whereas rural out-migration is particularly significant in the NMS. For the majority of rural areas, migration is the most important driver of demographic change with a direct effect, in terms of immigration and emigration, and an indirect effect through its impact on the age and gender structure (Copus et al., 2006). For instance, an important pattern is 'masculinisation' of the less developed and sparsely populated predominantly rural regions, such as in some Nordic regions and in the NMS, due to the out-migration of younger women. As several studies have shown, women tend to move more readily (Bojnec et al., 2003; Juvančič and Erjavec, 2005), pulled by more female-friendly labour markets in urban areas as well as better educational opportunities (Copus et al., 2006).

As emphasised by the Eurobarometer (2010), individuals residing in the NMS-12 are more inclined to migrate than those in the EU-15. Table 10 confirms that Eastern and Baltic member states, with the exception of the Czech Republic and Slovenia, have the lowest and often negative net migration rates, in comparison to the high positive rates in the Southern countries, probably due to the attractiveness of the climate and environment, and in Luxembourg, due to its attractiveness in terms of finance and business.

Table 10. Net Migration Crude Rate*, 2007

Country	PR	IR	PU	National Value
Belgium	7.2	5.6	5.2	5.4
Bulgaria	-3.3	0.5	5.4	-0.2
Czech Republic	3.0	2.4	14.2	5.3
Denmark	3.5	3.4	0.8	2.9
Germany	-2.6	-0.4	2.4	-1.4
Estonia	-0.3	-0.3		-0.1
Ireland	15.7		3.1	12.3
Greece	0.8	6.2	5.9	3.8
Spain	13.1	16.3	13.7	14.6
France	4.9	1.5	-1.0	1.6
Italy	6.5	7.1	8.4	7.4
Cyprus		10.6		10.6
Latvia	-4.6	-4.3	3.0	-0.9
Lithuania	-3.9	-1.3	2.5	-1.5
Luxembourg		12.1		12.1
Hungary	-1.2	4.9	4.6	2.0
Malta			9.8	9.8
Netherlands	0.9	-0.9	-0.8	-0.8
Austria	0.3	3.9	7.6	3.8
Poland	-2.2	-0.1	0.1	-0.8
Portugal	3.4	1.1	2.0	2.4
Romania	-2.6	0.7	7.0	-0.2
Slovenia	4.1	5.4		5.0
Slovakia	0.8	0.1	5.1	1.0
Finland	-0.4	3.5	5.7	2.4
Sweden	2.1	5.7	9.4	5.7
United Kingdom	n.a	n.a	n.a	n.a
EU-27	2.0	3.8	4.6	3.3
EU-15	5.2	5.9	5.0	4.1
NMS-12	-0.4	2.4	4.2	0.6

Notes: PR = predominantly rural; IR = intermediate rural; PU = predominantly urban

*The crude rate of net migration is equal to the difference between the crude rate of population increase and the crude rate of natural increase, i.e. population change not attributable to births and deaths.

Source: European Commission (2010a)

In order to describe the variation in performance of rural areas it is important to look at the agricultural sector which, although it is not the only sector in the rural economy, often represents a large share of employment, especially in the more remote rural areas.

4. Agriculture

4.1 The structure of agriculture

The structure of agriculture in the European Union presents heterogeneous characteristics across MS due to the diversities in geology, topography, climate, endowment of natural resources as well as infrastructure and social institutions (Eurostat, 2011c). According to the Farm Structure Survey (FSS), in 2007 in the EU-27 there were 13.7 million holdings, compared to 15 million in 2003. The drop in the number of holdings reflects structural change in the agricultural sector which entails the disappearance of smaller holdings, usually accompanied by an increase in the number of larger holdings (Eurostat, 2010a).

In 2007, the largest number of holdings were present in Romania (3.9 million), followed by Poland (2.4 million), Italy (1.7 million) and Spain (1 million). Moreover, there were 7.3 million commercial agricultural holdings in the EU-27 compared to 6.4 million small holdings (less than 1 European Size Unit). One of the features that characterise the agricultural sector in the NMS is the predominance of very small farms (< 1 ESU) which can be considered as semi-subsistence farms. In particular, 68.5% of the farms in the NMS-12 had an economic size of less than 1 ESU, with the largest percentages in Romania (78%), Hungary (77.5%), Slovakia (77%) and Bulgaria (76.1%), in comparison to an average of 15.7% for the EU-15 (European Commission, 2010a). Although the economic importance of small holdings is particularly tiny compared to the standard gross margin of the total farms (1.61% in 2007), small holdings characterise the structure of European agriculture, due to their prevalence in the NMS, with almost 40% of the European regular farm workers (over 10 million people) working on these holdings (Eurostat, 2010a).

A more accurate measure to represent semi-subsistence farms would rely on the amount of output sold, with a threshold of 50% (Davidova, 2011). According to this criterion, semi-subsistence farming, allocating more than 50% to household consumption, is an important phenomenon in the NMS, and in 2007 it represented the predominant farm structure with 65.9% of the total holdings, employing a large share of utilised agricultural area (around a fifth) with 60% of the regular farm workers. In comparison to the <1 ESU measure, farms consuming more than 50% of output in the NMS would suggest largest figures in terms of utilised agricultural area, regular labour, livestock units and standard gross margin. Moreover, the productivity gap within the semi-subsistence sector between the NMS and the EU-15 becomes more apparent.

4.2 Employment in agriculture and the labour force

In 2009, agriculture accounted for 5.1% of the overall employment in the EU-27, with the largest shares recorded in Romania (29.1%), Poland (13.3), Portugal (11.2%) and Greece (11.9%), and the lowest shares in the UK (1.1%), Luxembourg (1.4%), Malta (1.4%), Belgium (1.5%) and Germany (1.7%) (Table 11). In terms of figures, within the EU there were 11,120 thousand persons employed in the sector, of which almost half (43%) in Romania and Poland, with 2,689 and 2,107 thousand people respectively. These were followed by Italy, Spain, France, Germany, Portugal and Greece, which altogether represented 37% of the total population employed in the sector in 2009.

Table 11. Employment in Agriculture, 2004-2009

Country	Persons employed in agriculture, hunting, forestry and fishing (1,000 persons)		Agriculture in total employment (%)	
	2004	2009	2004	2009
Belgium	92	66	2.2	1.5
Bulgaria	319	231	10.7	7.1
Czech Republic	208	154	4.4	3.1
Denmark	90	71	3.3	2.5
Germany	835	649	2.4	1.7
Estonia	32	24	5.5	4.0
Ireland	117	96	6.4	5.0
Greece	546	537	12.6	11.9
Spain	979	786	5.5	4.2
France	953	752	3.9	2.9
Italy	943	849	4.2	3.7
Cyprus	17	15	5.1	3.9
Latvia	136	85	13.3	8.7
Lithuania	234	130	16.3	9.2
Luxembourg	4	3	2.0	1.4
Hungary	205	174	5.3	4.6
Malta	3	2	2.3	1.4
Netherlands	256	218	3.3	2.8
Austria	181	214	5.0	5.3
Poland	2409	2107	17.6	13.3
Portugal	619	565	12.1	11.2
Romania	3024	2689	32.6	29.1
Slovenia	91	89	9.8	9.1
Slovakia	109	85	5.1	3.6
Finland	119	113	5.0	4.6
Sweden	107	98	2.5	2.2
United Kingdom	360	321	1.3	1.1
EU-27	12987	11120	6.3	5.1
EU-15	6200	5337	3.8	3.1

Source: European Commission (2011a)

The number of people employed in agriculture has been declining: over the period 2004-09 the sector has experienced a significant decrease, on average by 14.4%, with more than 1.8 million people leaving the sector and with the share in total employment falling by 1.2 percentage points. With all MS sharing this trend, the largest net changes have occurred in Lithuania and Latvia (respectively -44% and -37.5%), and the smallest in Greece and Slovakia (-1.6% and -2.2%). In terms of shares in total employment, the largest decline was observed in Lithuania, Latvia, Poland, Bulgaria and Romania.

In reality, the persons involved in agriculture are much more numerous, since these data only cover those people working in the primary sector as their main activity in the 15-64 working age category. On the other hand, the farm labour force represent all people who, having reached their schooling-leaving age, carry out farm work, thus it includes part-time and seasonal work. In 2007, the total farm labour force in the EU-27 was equivalent to 11.7 million annual work units (AWU), with a 12% decrease compared to 2003 (Table 12). This translates into 13.4 million workers. On average, 92% of the total farm labour force were regular workers, meaning that seasonal and casual workers represented only a small minority. The highest shares of seasonal workers, usually employed in the fruit and vegetable

sector, were observed in Spain, Greece, France and Italy. Moreover, only 34% of the labour force was full-time employed, with wide disparities across MS and with the highest shares in Belgium (71%), Denmark (70%) and the Czech Republic (68%). Full-time employment in agriculture represented only a minority (below 50%) in the NMS and in Southern countries, particularly in Romania (4%), Lithuania (14%), Greece (22%) and Hungary (25%), indicating the prevalence of part-time farming. Several studies have suggested that part-time farming is a 'stepping stone out of agriculture' (Pfeffer, 1989; Weiss, 1999; Bojnec et al., 2003), as part-time workers are more inclined to exit the sector. On the other hand, others have shown the importance of part-time farming as a stabilising factor of employment and farm survival (Kimhi, 2000; Glauben et al., 2003; Breustedt and Glauben, 2007). The proportion of females working in agriculture was particularly low in 2007, representing 34% of the farm labour force, with the highest shares in the Baltic States followed by Poland, Romania, Slovenia and Portugal, although never above 50%. Furthermore, agriculture in the EU-27 is family-oriented, with most of the farm labour (78%) being farm holders or family members. This pattern was confirmed across all MS, with a few exceptions including the Czech Republic (27%), Slovakia (44%) and France (47%), having different farm structures. In the Czech Republic and Slovakia the agricultural reforms in 1990s resulted in the continuation of large corporate farms successors of the pre-reform collective and state farms. These corporate farms employed a substantial number of farm workers. Nonetheless, the family labour force has increased in both the Czech Republic and Slovakia during the period 2003-07 (Eurostat, 2010a).

Table 12. Farm Labour Force, 2007

Country	Total labour force (1 000 AWU)	Regular labour force (%)	Full-time regular labour force (%)	Female regular labour force (%)	Family labour force (%)	Holders <35 years old (1 000)	Holders >=65 years old (1 000)
Belgium	66	95	71	29	79	3	9
Bulgaria	491	95	38	39	85	15	222
Czech Republic	137	98	68	32	27	4	7
Denmark	56	96	70	23	61	3	9
Germany	609	91	50	28	69	28	27
Estonia	32	98	46	46	61	1	7
Ireland	148	98	60	21	93	9	32
Greece	569	86	22	29	82	60	321
Spain	968	82	42	20	65	44	361
France	805	89	67	25	47	34	66
Italy	1,302	90	37	30	84	49	741
Cyprus	26	94	31	32	75	1	12
Latvia	105	99	30	50	84	8	32
Lithuania	180	98	14	48	85	10	93
Luxembourg	4	98	63	27	85	0	0
Hungary	403	97	25	37	77	47	172
Malta	4	99	41	14	88	0	3
Netherlands	165	91	56	26	61	3	13
Austria	163	97	53	41	88	16	18
Poland	2,263	97	34	42	95	294	388
Portugal	338	93	35	41	82	5	130
Romania	2,205	93	4	42	90	167	1,762
Slovenia	84	96	21	41	92	3	26
Slovakia	91	96	40	32	44	2	22
Finland	72	94	56	30	83	6	4
Sweden	65	97	42	26	76	4	15
United Kingdom	341	93	55	23	67	7	92
EU-27	11,693	92	34	34	78	823	4,584

Source: Eurostat (2010b).

Lastly, in comparison to other sectors, agriculture, forestry, hunting and fishing are characterised by a decreasing number of young people and an overall ageing population which are greater compared to other sectors. In 2007, a particular high share of older workers (above 55 years) was observed in Portugal (62.5%), Cyprus (55.3%), Slovenia (43.8%) and Ireland (41.2%), of which the former two also presented a relatively high share over 65, namely 40% for Portugal and 30% for Cyprus. The age distribution of agricultural holders presents a similar situation, as a large proportion (34%) of these were over 65 years old with even higher shares (more than 40%) in Portugal, Romania, Bulgaria, Italy and Lithuania. Only a small minority (6%) was under 35 years, with the highest shares (around 9%) in the Czech Republic, Austria and Finland. The ageing of the labour force is an important supply-side limitation, which not only affects the structure of agriculture but hinders the development of the rural economy, as in terms of human capital, younger farmers are better trained and in terms of labour use and economic potential they perform better (European Commission, 2010a). Nonetheless, the share of older farm workers (>65) is often influenced by the pension schemes in the respective countries. For instance, Pietola et al. (2003) found that higher retirement benefits in Finland during the early retirement programme have accelerated the rate of exit from the sector, particularly of lower income farmers. The results suggest that when there is uncertainty over the continuation of these

payments the probability of exit is doubled, which can be explained in terms of the farmers' perceived financial threat. In terms of national legislation, in Poland there is a special pension provision for agricultural workers, which could have influenced the present structure of keeping the 'golden' 1 ha to qualify as a farmer. On the other hand, in many of the NMS-12, such as Romania, pensions are too low and many pensioners move to the agricultural sector for additional income (Copus et al., 2006). In other countries, such as Germany, an agricultural holder needs to pass on the farm to a successor in order to be eligible for a pension scheme, leading to a small share (7%) of holders over 65.

4.3 Human capital in agriculture and labour productivity

In 2005, only one fifth of the EU-27 farmers attained basic or full agricultural training, implying that the remaining part had only experience acquired through practical work on an agricultural holding[7] (Table 13). There were huge disparities among countries, with extremely low values in the Southern countries, in particular Malta (0.4%), Greece (5.4%) and Cyprus (6.4%), and in the Eastern countries, especially Bulgaria (5.3%) and Romania (7.4%), in comparison to higher shares in Western countries, such as Netherlands (71.5%), Germany (68.5%) and France (54.3%).

[7] This indicator refers to the education levels of managers which can be defined as: only practical experience, basic agricultural training, or full agricultural training. For a more extensive definition see: http://eur-lex.europa.eu/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=en&numdoc=32000D0115&model=guichett

Table 13. Training and Education in Agriculture, 2005 (%)

Country	Farmers with basic or full agricultural training
Belgium	47.7
Bulgaria	5.3
Czech Republic	44.7
Denmark	44.5
Germany	68.5
Estonia	32.9
Ireland	30.7
Greece	5.4
Spain	10.5
France	54.3
Italy	11.2
Cyprus	6.4
Latvia	34.1
Lithuania	30.9
Luxembourg	55.9
Hungary	13.4
Malta	0.4
Netherlands	71.5
Austria	48.1
Poland	38.5
Portugal	11.8
Romania	7.4
Slovenia	28.0
Slovakia	14.6
Finland	40.6
Sweden	33.6
United Kingdom	23.2
EU-27	20.0
EU-15	21.8
NMS-12	18.2

Source: European Commission (2010a)

Labour productivity in agriculture, measured as the ratio of the gross value added to AWU, differs substantially across MS, with a wide divide between the NMS and the EU-15 (Table 14). Whereas in 2005 the former achieved only 28% of the EU-27 average in 2007, the EU-15 was 78% above the average. In particular, the lowest values in terms of labour productivity were found in Latvia, Bulgaria, Romania and Poland, whereas the highest were observed in Netherlands, Belgium and Denmark. On the other hand, in the period 2002-04 and 2006-08, labour productivity increased faster in the NMS-12 relative to the EU-15, with particularly high growth rates in Lithuania and Hungary. A few exceptions include a slow labour productivity growth rate in Romania and even negative in Malta.

Table 14. Labour Productivity in Agriculture, 2003-2007

Country	Labour Productivity in Agriculture index in euros	Change in Labour Productivity in Agriculture % per year
	2007	2003-2007
Belgium	281	-0.2
Bulgaria	24	6.3
Czech Republic	64	5.2
Denmark	280	2.4
Germany	211	3.2
Estonia	59	9.4
Ireland	89	-8.1
Greece	85	0.0
Spain	188	1.0
France	242	1.8
Italy	166	2.1
Cyprus	89	1.0
Latvia	23	9.0
Lithuania	34	13.9
Luxembourg	232	3.5
Hungary	40	12.0
Malta	107	-6.2
Netherlands	368	3.4
Austria	139	4.6
Poland	26	4.9
Portugal	46	4.1
Romania	25	0.1
Slovenia	40	1.4
Slovakia	47	7.3
Finland	101	5.9
Sweden	171	8.8
United Kingdom	223	2.1
EU-27	12.719	2.7
EU-15	178	2.0
NMS-12	28	n.a

Notes: Labour productivity is measured as: GVA (in euros)/AWU (EU-27=100)
Change in labour productivity is measured as: average annual growth rate of GVA/AWU (in volume)

Source: European Commission (2010a)

Therefore, since labour productivity is the main contributor to GDP per capita in rural areas, the low levels of productivity in agriculture in the NMS are particularly worrying, with important impacts for the economic growth, and thus living standards and social development of these regions. This is particularly exacerbated by the important role of agriculture in rural areas of some NMS.

4.4 Pluriactivity and diversification activities

Over the last years, the pluriactivity of European farmers has been increasing, with more than one third (35%) of the European farmers in 2007 carrying out other gainful activities, i.e. any activity other than farming carried out for remuneration. Large differences exist across member countries, from the highest shares in Slovenia (77.9%), Sweden (70.9%) and Cyprus (50.1%), to the lowest in Belgium (16%) and Luxembourg (18.2%) (Table 15). In general, pluriactivity seemed to be more widespread in Eastern and Northern MS in comparison to Southern and Western ones, and was found to be a main feature of smaller farms looking for additional sources of income (European Commission, 2008).

Table 15. Farmers with Other Gainful Activities, 2007 (%)

Country	Holders with other gainful activities
Belgium	16.0
Bulgaria	37.0
Czech Republic	46.5
Denmark	48.2
Germany	48.2
Estonia	43.7
Ireland	47.1
Greece	23.2
Spain	32.3
France	25.2
Italy	27.8
Cyprus	50.1
Latvia	40.4
Lithuania	31.8
Luxembourg	18.2
Hungary	38.1
Malta	47.3
Netherlands	28.2
Austria	37.6
Poland	39.5
Portugal	25.2
Romania	36.3
Slovenia	77.9
Slovakia	44.3
Finland	42.6
Sweden	70.9
United Kingdom	42.2
EU-27	35.3
EU-15	31.2
NMS-12	38.0

Note: Sole holders-managers with other gainful activity as percentage of total number of farm holders (sole holders-managers).

Source: European Commission (2010a)

The diversification resulting from the development of other gainful activities besides farming represents an important contribution to the household income and the rural economy as a whole. Diversification activities can smooth the income variability and be important for the viability of the farm. Since human capital is an important prerequisite in order to set new activities on the farm, targeted programmes with focus on both high educational attainment and entrepreneurship skills are needed.

As emphasised by the European Commission (2006), the development of diversification activities may entail a better integration of women and young people in the rural labour market, as they are often key players in this diversification (European Commission, 2006). For instance, women have a particularly decisive role in the development of new on-farm gainful activities, such as farm tourism or direct selling (Copus et al., 2006).

5. Labour market institutions

5.1 Labour legislation

The differences across European labour markets are to a great extent related to the labour market institutions. The provision of efficient regulations and information are fundamental for the well-functioning and good governance of labour markets. In general, it has often been acknowledged that labour codes and social protection systems are underdeveloped in rural areas, especially due to the large amount of self-employment, casual labour and those hired through informal employment agreements (ILO, 2008).

We draw briefly upon the responses received from the partners in the Factor Markets Project to the questionnaire surveying labour markets in selected EU members conducted by the Teagasc Team participating in the project. The information presented aims at providing a general picture of the differences in regulations and social protection systems in agriculture across selected EU MS.

Looking at some general indicators in terms of labour legislation in agriculture, it seems that, among the surveyed MS, there is a regulatory framework for the maximum number of working hours per week, which are generally around 40. In some countries there is more flexibility in terms of hours per week, such as in Ireland, France and Netherlands, where the maximum can reach 48 hours. Labour codes in the wide economy usually apply to all sectors, although often some regulations are specifically applied to agriculture, such as in terms of health and safety regulations, with the exception of Slovakia. Similarly, some countries have specific farm employees' rights, although employment contracts are not always formalised. Informal verbal contracts, also known as gentleman's agreements, are particularly widespread in some countries and especially in the case of seasonal agricultural work and casual labour. In few MS, namely Ireland, Greece and Poland, informal contracts represent the common pattern (Table 16).

Table 16. Labour Legislation in Agriculture

Country	Is there a maximum number of working hours?	Maximum number of hours per week	Are there specific health and safety regulations?	Is there typically a formal or informal contract for employment?	Are there specific workers' rights?
Belgium	Yes	38	n/a	Formal contract	Yes
Germany	Yes	40	General legislation applies	Formal contract	Yes
Ireland	Yes	48	General legislation applies	Informal verbal contract	No
Greece	Yes	40	General legislation applies	Informal verbal contract	Yes
France	Yes	48	n/a	Formal contract	No
Italy	Yes	39	Yes	Formal contract	Yes
Netherlands	Yes	48	Yes	Formal contract	Yes
Poland	Yes	40	Yes	Both	No
Slovakia	Yes	40	No	Formal contract	No
Finland	Yes	40	Yes	n/a	Yes
Sweden	Yes	40	Yes	Formal contract	No
United Kingdom	Yes	39	Yes	Formal contract	Yes

Source: Factor Markets Project - Response from Member Countries to Teagasc's designed questionnaire.

A priori, informal contracts allow more flexibility in the labour market as they are not accompanied by rigid regulations in terms of hiring and firing. On the other hand, these types of contracts do not provide workers with enforceable rights, and thus do not protect them from exploitation, in terms of working hours, wage, and health and safety regulations. Nonetheless, the high share of family farm labour in Ireland, Greece and Poland (recall Table 12) would justify the predominance of informal contracts for employment in these countries.

5.2 Union density

In terms of trade unions, farm owners and/or operators are typically represented by a union, with the exception of Slovakia, with membership of farm owners and operators larger than 75% in Germany, Greece, France, Italy, Finland, Sweden and the UK. Conversely, labour unions for farm employees appear to be less widespread, although there is not enough reliable data to support this statement with certainty (Table 17). This would suggest that farm workers are not usually collectively organised to bargain wages and defend regulations formalised in work contracts. However, on the other hand, this would suggest flexibility in the labour market.

Table 17. Labour Unions in Agriculture

Country	Are farm owners/operators typically represented by a union? Indicate an estimated approximate share.	Are farm employees typically represented by a union? Indicate an estimated approximate share.
Belgium	Yes. 50%	No
Germany	Yes. 80%	No
Ireland	Yes. 50%	No
Greece	Yes. More than 80%	Yes
France	Yes. 75%	Yes
Italy	Yes. 90%	Yes. 50%
Netherlands	Yes. 67%	No. 13%
Poland	Unions occur although it is difficult to state whether they are typically represented by a union.	Unions occur although it is difficult to state whether they are typically represented by a union.
Slovakia	No	No
Finland	Yes. 99%	Yes
Sweden	Yes. 90%	Yes
United Kingdom	Yes. 80%	No. 7%

Source: Factor Markets Project - Response from Member Countries to Teagasc's designed questionnaire.

5.3 Social protection

Social protection systems, including minimum wage regulation, unemployment benefits and pension schemes, are implemented in different ways across countries and provide different incentives to stay in or leave the agricultural sector (Table 18). The minimum wage in agriculture is not applied in the majority of the surveyed MS: in Germany, Greece, Italy, the Netherlands, Poland, Slovakia and Sweden, agricultural wages do not follow specific legislation. This again suggests flexibility in the market for hired farm labour. Specific regulations are instead applied in other MS and exhibit differences across countries. For instance, in France the minimum wage in agriculture is the same in the other sectors, whereas in Finland there is no minimum wage outside the agricultural sector. In Greece there is a divide among white and blue collars, which imposes minimum wages according to the category of workers. In other countries, such as Belgium and the UK, the minimum wage often varies according to the age and the type of worker (casual, seasonal, etc.), as well as to their experience and education. In particular, in the UK there are six different grades with

corresponding wages according to the qualification, experience and duties of farmers. Lastly, in Sweden and the Netherlands there are no minimum wages in the economy and wages are recorded in the various collective labour contracts and/or are a result of negotiations between trade unions and associations of employers, and thus would only apply for those firms and large farms that are members of these associations. Farm employees are generally eligible for unemployment benefits if they leave the sector and become unemployed, subject to their previous record and to whether they had an official contract or not. This is particularly important as it constitutes a safeguard for migrating farm workers seeking for alternative employment. Lastly, with the exception of Slovakia, the provision of pension schemes also applies to agricultural workers, when officially registered as workers and contributing to the pension scheme. The mandatory pension provisions for employees engaged in agricultural activities are the same as for those engaged in diversified on-farm activities.

member states' discrepancies in expenditures on social protection reflect differences in demographic trends and employment levels, and are often an indicator of welfare and economic development. Supporters of minimum regulations and social protection claim that these policies are needed for a minimum standard of living and for guaranteeing workers' rights. Nonetheless, it has often been advocated that these policies are distorting and create rigidity in the labour market, since high levels of protection, such as high unemployment benefits and pension schemes, induce people to stay out of the labour force, and high minimum wages lead to involuntary unemployment, particularly for those less skilled and inexperienced. Therefore, the well-functioning of labour market institutions requires flexi-curity, i.e. enough flexibility in the labour market in order to keep productivity high and at the same time quality and security of employment (Auer, 2007). By these means, both efficiency and equity can be guaranteed.

Table 18. Social Protection in Agriculture

Country	Is there a specific minimum wage?	When was it introduced?	What is the minimum wage level? Is it higher or lower compared to the economy wide minimum wage?	Are unemployment benefits available for employees who leave agriculture and become unemployed?	Are there pension schemes for farm employees?	Are these pensions the same as for those engaged in diversified on-farm activities?
Belgium	Yes	n/a	It depends on the experience and the type of worker. Uneducated: 8.34 euro per hour, experienced: 8.80 euro, educated: 9.20 euro, seasonal labour: 7.84 euro	Yes	Yes. Normal pensions if officially registered as workers and contributing to the pension system.	
Germany	No			Yes	Yes	Yes
Ireland	Yes	n/a	9.33 euro per hour	Yes	Yes	Yes
Greece	No		Different rates for blue and white collar workers	Yes	Yes	No
France	Yes	1950	9 euro per hour (above 18 years old). It is the same as in other sectors.	Yes	Yes	Yes
Italy	No			Yes	Yes	Yes
Netherlands	No		Agricultural wages are recorded in the various collective labour contracts, which are usually higher than the legal minimum wage.	Yes	Yes	Yes
Poland	No			Yes	Yes	Yes
Slovakia	No			Yes	No	
Finland	Yes	2011	7.72 euro per hour. There is no minimum wage in the economy wide.	Yes	Yes	Yes
Sweden	No		There is no minimum wage. Wages (and agricultural wages) are decided in negotiations between trade unions and associations of employers and apply for firms (and large farms) that are members of the association in question.	Yes	Yes	Yes
United Kingdom	Yes	1948	It depends. There are six grades according to the duties, responsibilities and/or qualifications possessed. Agricultural workers are paid at least the national minimum wage.	Yes	Yes. Standard state pensions.	Yes

Source: Factor Markets Project - Response from Member Countries to Teagasc's designed questionnaire.

6. Cluster analysis

The wide range of indicators which have been used so far have emphasised the heterogeneity within the European Union, highlighting differences between the NMS and the EU-15, and

between urban and rural areas. Nonetheless, further analysis is required in order to find more systematic similarities and differences across countries. Hence, cluster analysis has been employed to classify the EU MS on a set of variables so that the resulting clusters would exhibit high within-cluster homogeneity and high between-cluster heterogeneity (Hair et al., 2010).

Since the interest is mostly in commonalities and differences in rural areas with special regards to agriculture, in this analysis the main focus is on those indicators describing the predominantly rural areas, in terms of shares of the population, gross value added, employment, primary sector, tertiary sector, education attainment and economic development, as well as some specific agricultural characteristics, e.g. the share of agriculture in total employment, the amount of full-time regular labour force, the number of holders aged under 35 and over 65, the share of farmers with agricultural training and labour productivity in agriculture. Due to missing values, five countries were not included in the clustering process, namely Cyprus, Malta, Luxembourg, Austria and Lithuania, leaving twenty-two cases. Applied hierarchical clustering was applied using SPSS, which begins with ungrouped objects and merges them into a successively smaller number of groups, by employing the Ward's method[8]. Using the squared Euclidean distance as an interval measure, such that the distance between observations indicates similarity[9], a number of clusters could be formed. The clustering process, summarised by the agglomeration schedule (Table A.2 in Appendix) and the dendogram (Table A.3 in Appendix), has produced an 'optimal' five cluster-solution, where each cluster represents a grouping of countries. Looking at the cluster membership (Table 19), and as also shown graphically in the dendogram, it is evident that Italy and Romania represent two specific cases in this analysis as they are respectively the only member in their cluster (Cluster 4 and Cluster 5). On the other hand, the remaining countries are members of three clusters. Cluster 1 includes seven countries, namely Belgium, Denmark, Germany, France, the Netherlands, Sweden, the UK, which represent the more developed MS, geographically located in the North-West of Europe. Cluster 2, with six countries, encompasses Bulgaria, Greece, Spain, Hungary, Poland and Portugal, and therefore joins Southern MS (with the exception of Italy) with some of the NMS which, excluding Romania, are those more reliant on agriculture. Lastly, Cluster 3 includes seven countries, i.e. the Czech Republic, Estonia, Ireland, Latvia, Slovenia, Slovakia and Finland. Most probably, if Lithuania had no missing values, it would be merged to this cluster, due to its similarity to the other Baltic countries as well as to the Eastern MS. The cluster division has allowed reducing the amount of data and providing a more systematic classification of the MS which, according to their cluster membership, can now be compared.

[8] The Ward's method is a hierarchical clustering algorithm in which the similarity used to join clusters is calculated as the sum of squares within the clusters summed over all variables (Hair et al., 2010).

[9] The proximity matrix in the Appendix (Table A.1), also known as similarity (or better dissimilarity) matrix, measures the distance (squared Euclidean) between objects in the clustering process.

Table 19.Cluster Membership

Country	Cluster Membership
Belgium	1
Bulgaria	2
Czech Republic	3
Denmark	1
Germany	1
Estonia	3
Ireland	3
Greece	2
Spain	2
France	1
Italy	4
Cyprus	
Latvia	3
Lithuania	
Luxembourg	
Hungary	2
Malta	
Netherlands	1
Austria	
Poland	2
Portugal	2
Romania	5
Slovenia	3
Slovakia	3
Finland	3
Sweden	1
United Kingdom	1

For descriptive purposes, Table 20 provides a summary in the form of analysis of variance (ANOVA) with respective F tests and significance levels. The results show that there are significant differences between the five clusters on these specified variables, thus providing evidence that each of the clusters is distinctive (Hair et al., 2010). Therefore, the table profiles the five clusters presenting the mean values for the variables included in the analysis as well as the total sample mean.

Table 20. Means from Hierarchical Cluster Analysis

Variable	Cluster Mean					Total N = 22	F-test	Sig
	Cluster 1 n = 7	Cluster 2 n = 6	Cluster 3 n = 7	Cluster 4 n = 1	Cluster 5 n = 1			
PR population (%)	17.73	36.20	47.10	20.50	45.90	33.52	4.786	0.009 ***
PR GVA (%)	15.00	27.25	36.59	18.60	33.80	26.23	3.226	0.038 **
PR employment (%)	16.30	34.02	43.20	19.40	42.20	31.01	4.490	0.012 **
PR primary sector (%)	5.30	21.02	9.44	7.90	38.90	12.55	17.010	0.000 ***
PR tertiary sector (%)	68.94	51.22	55.84	62.80	32.10	57.99	14.185	0.000 ***
PR medium or high education attainment (%)	76.76	61.90	84.84	55.60	73.30	74.16	2.675	0.068 *
PR economic development	101.57	55.33	68.43	93.00	28.00	74.68	3.471	0.030 **
Agriculture in total employment (%)	2.10	8.72	5.44	3.70	29.10	6.27	25.301	0.000 ***
Full-time regular labour force (%)	58.66	32.63	45.67	36.75	3.53	43.93	6.316	0.003 ***
Holders < 35 years old (1 000)	11.62	77.58	4.71	49.07	166.87	36.17	2.769	0.061 *
Holders > 65 years old (1 000)	33.11	265.63	18.58	740.54	1761.76	202.63	211.962	0.000 ***
Farmers with basic or full agricultural training (%)	49.04	14.15	32.23	11.20	7.40	30.56	6.626	0.002 ***
Labour productivity in agriculture (index in euros)	253.71	68.17	60.43	166.00	25.00	127.23	15.472	0.000 ***

Note: PR = predominantly rural areas.
*Statistically significant at the 10% level; **significant at the 5% level; * significant at the 1% level.

Cluster 1, including the most developed countries in the North-West of Europe, presents the lowest shares of population, gross value added and employment in predominantly rural areas. The share of the primary sector in these areas also presents the lowest mean (5.3%) with a very low percentage of people employed in the agricultural sector (2.1%). On the other hand, the tertiary sector represents almost 70% of the economy in predominantly rural areas, with levels of economic development, measured by per capita GDP in purchasing power standards, exhibiting very high levels. In terms of human capital, more than 75% of the population has medium or high education attainment, whereas this figure is relatively lower for farmers, as less than 50% of the farm labour force has received basic or full agricultural training; nonetheless, this figure is still much higher in comparison to the other clusters. Labour productivity in agriculture also displays very high levels, which are well above the average. In terms of agricultural characteristics, full-time employment represented 58.66% of the farm labour force.

Cluster 2 groups some of the Southern MS and few NMS, namely Poland, Bulgaria and Hungary, and exhibits relatively high shares of the population, gross value added and employment in predominantly rural areas, representing around 30%. The primary sector accounts for 21%, with agricultural employment in total employment just below 9%. The tertiary sector in these areas is just above 50% with relatively low levels of economic development in comparison to other clusters. Educational attainment is the lowest when compared to other countries, with also low levels of agricultural training for farmers (14% of the farm labour force). The share of holders over 65 years old is also quite high, especially in Portugal and Bulgaria. As a consequence, labour productivity in the agricultural sector is below the average level.

Cluster 3, which includes some of the NMS as well as countries which are largely rural, such as Finland and Ireland, stands out for the highest values of population, gross value added and employment in predominantly rural areas, well above average levels. The primary sector represents 9.4% of the economy in these areas, with 5% of labour employed in agriculture. On the other hand, the tertiary sector is above 50%, with levels of development still lower than average. The level of education is particularly high in these areas (84%), with 30% of the labour force in agriculture having received specific training.

Cluster 4, i.e. Italy, somewhat follows the trend of Cluster 1 for the importance of predominantly rural areas in terms of population, gross value added and employment, and for the share of primary sector. Therefore, the tertiary sector is well above average (62% in these areas), thus exhibiting high levels of economic development. On the other hand, educational attainment is the lowest in comparison to other clusters and is also very low in

terms of the farm labour force. Nonetheless, labour productivity in agriculture is above average, although lower in comparison to the MS in Cluster 1.

Lastly, Cluster 5, i.e. Romania, has the highest share of labour employed in agriculture (29%), although predominantly rural areas are less significant in comparison to Cluster 3, with population, gross value added and employment in these areas around 40%. The primary sector is the most important one in these areas (38%) with the tertiary sector accounting only for 32%. Consequently, economic development is particularly low, although 73% of the population has received medium or high education, which is well above other countries. Nonetheless, the agricultural labour force is characterised by very low levels of agricultural education, with only 7.4% of the farm labour force having received basic or full training, and with a high share of farm holders over 65 years. As a consequence, it is not surprising that labour productivity in agriculture is particularly low and considerably below average.

7. Conclusion

The paper has provided an extensive description of labour markets, according to some main indicators, attempting to emphasise the commonalities and differences amongst the EU MS and regional groupings, i.e. the new member states (NMS-12) versus the old member states (EU-15), North-West/South-East divides. Previous reports and Eurostat statistical data have been extremely used.

The first conclusion concerns the dimension of the rural space which, although characterised by the stylised facts of inadequate human capital, unfavourable age structure, low levels of productivity, low GDP per capita, few employment opportunities, lack of adequate provision of services and modern infrastructure, is also very heterogeneous.

Overall, the main findings suggest that within the NMS the disparities between rural and urban areas are more accentuated, and that rural areas are more important in terms of population and employment than in the EU-15. In this respect it is worth stressing that rural areas in these countries are more at stake, as they suffer from a less-developed tertiary sector, lower levels of GDP per capita and lower employment rates. On the other hand, in terms of educational attainment they perform quite well with levels above the EU average, both in rural areas and at national level. Southern MS present an unfavourable situation concerning human capital. However, specific agricultural training and productivity levels are low in the NMS-12. Since labour productivity is the main contributor to GDP per capita in rural areas, it is particularly worrying for the economic growth, living standards and social development of these regions. Therefore, policy implications may include investment in human capital and vocational training, support to young farmers, promoting economic diversification and upgrading infrastructure, with special regards to the NMS-12 and to the Southern parts of Europe.

In particular, this study has emphasised the heterogeneity of the rural space within the European Union and has provided a detailed description of the EU MS according to various indicators. In order to find a more systematic classification of countries, cluster analysis was also employed. As a result, the EU MS could be classified into five statistically different clusters. Hierarchical clustering has grouped together the North-West MS, which present the highest levels of economic development (Cluster 1), the Southern MS with a few NMS, i.e. Bulgaria, Hungary and Poland, mostly characterised by higher rates of employment in agriculture and by low levels of human capital in rural areas (Cluster 2), and lastly the Baltic MS, Ireland, Finland and the remaining NMS, for which rural areas are particularly important, and which are nonetheless characterised by high levels of education in these regions (Cluster 3). Italy and Romania are outliers and are classified in Cluster 4 and Cluster 5 respectively.

Appendix

Table A.1. Proximity Matrix

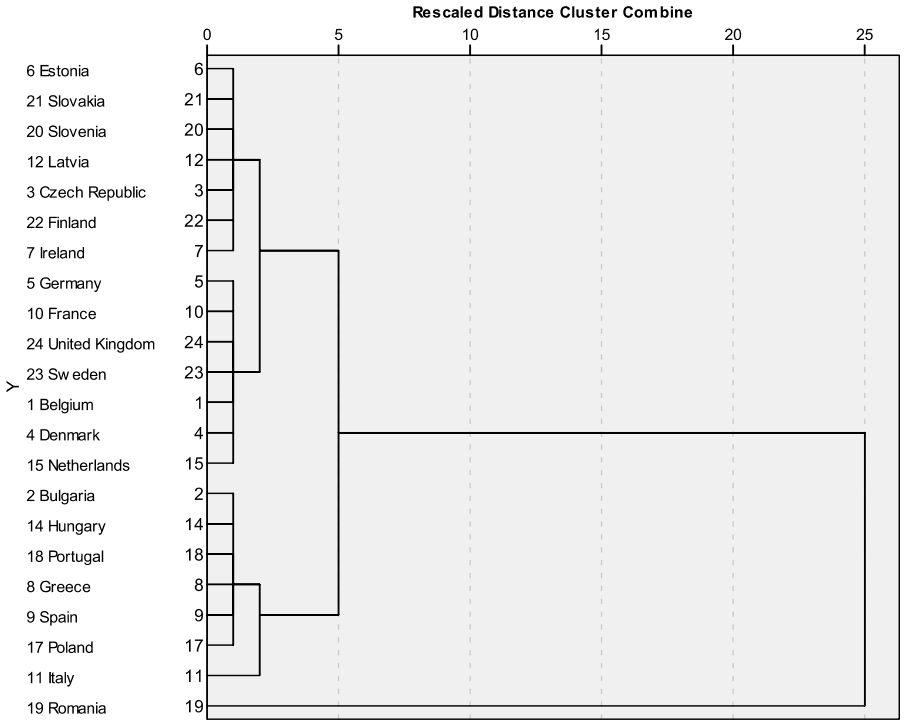
	Squared Euclidean Distance																				
Case	1:1 Belgium	2:2 Bulgaria	3:3 Czech Republic	4:4 Denmark	5:5 Germany	6:6 Estonia	7:7 Ireland	8:8 Greece	9:9 Spain	10:10 France	11:11 Italy	12:12 Latvia	14:14 Hungary	15:15 Netherlands	17:17 Poland	18:18 Portugal	19:19 Romania	20:20 Slovenia	21:21 Slovakia	22:22 Finland	23:23 Sweden	24:24 United Kingdom
1:1 Belgium	.000	120152.754	49965.974	4850.163	7916.850	55361.111	50793.063	146997.338	137315.843	7033.305	553584.319	73746.348	94796.414	14758.539	299702.991	77292.133	3178575.907	65649.045	62562.120	36669.405	15204.941	11448.747
2:2 Bulgaria	120152.754	.000	52785.078	122034.600	84143.492	49566.550	54070.547	18345.788	53083.269	80471.956	296544.018	37652.875	4999.984	186997.884	106635.351	13319.910	2396244.781	42018.249	42756.090	60671.387	73970.398	64317.670
3:3 Czech Republic	49965.974	52785.078	.000	49703.894	25425.626	1488.679	9003.334	107981.545	148070.481	37571.978	555663.068	5400.875	33529.568	104617.482	233473.636	22368.145	3117845.114	3981.507	3044.206	3020.503	14886.670	36511.251
4:4 Denmark	4850.163	122034.600	49703.894	.000	8932.888	54538.042	39555.362	145232.631	140468.348	7008.407	554763.963	75786.695	93687.236	15279.097	301162.912	76678.269	3180511.114	62676.624	60290.506	32607.538	14057.151	16331.550
5:5 Germany	7916.850	84143.492	25425.626	8932.888	.000	30408.648	25407.014	111704.451	117602.495	3702.805	515636.239	43130.549	59117.976	29689.165	241345.871	47914.336	3077694.033	35187.495	35328.616	15688.557	3909.026	7791.008
6:6 Estonia	55361.111	49566.550	1488.679	54538.042	30408.648	.000	9961.439	106067.085	150315.037	42058.157	557111.965	2734.334	30539.534	114594.561	232513.128	20838.602	3111880.198	2547.862	868.100	4845.019	18238.175	40652.981
7:7 Ireland	50793.063	54070.547	9003.334	39555.362	25407.014	9961.439	.000	93683.723	131187.606	31873.261	518321.249	17519.588	32407.352	94160.159	223681.926	20513.416	3038188.683	8711.474	9219.543	3951.442	14068.265	35976.704
8:8 Greece	146997.338	18345.788	107981.545	145232.631	111704.451	106067.085	93683.723	.000	15533.145	96380.872	184860.281	94063.474	25821.382	195712.265	65804.137	42561.217	2093847.531	93706.978	96733.786	107624.556	109504.494	80940.675
9:9 Spain	137315.843	53083.269	148070.481	140468.348	117602.495	150315.037	131187.606	15533.145	.000	94119.060	144667.403	143726.582	63173.610	165077.863	95537.166	77978.230	2012459.541	140482.857	143022.378	141311.933	125048.827	76883.788
10:10 France	7033.305	80471.956	37571.978	7008.407	3702.805	42058.157	31873.261	96380.872	94119.060	.000	464452.263	55719.165	58498.384	26325.228	223338.054	49255.828	2954517.606	47714.959	46190.055	25568.195	10380.144	4810.884
11:11 Italy	553584.319	296544.018	555663.068	554763.963	515636.239	557111.965	518321.249	184860.281	144667.403	464452.263	.000	531017.696	343856.839	580778.276	210044.349	392223.833	1086248.986	531446.143	537690.126	551458.343	530646.361	427312.033
12:12 Latvia	73746.348	37652.875	5400.875	75786.695	43130.549	2734.334	17519.588	94063.474	143726.582	55719.165	531017.696	.000	22646.051	140563.474	209116.757	15995.904	3021789.443	2880.256	2360.083	12422.173	29445.365	50341.972
14:14 Hungary	94796.414	4999.984	33529.568	93687.236	59117.976	30539.534	32407.352	25821.382	63173.610	58498.384	343856.839	22646.051	.000	156045.488	109357.242	7179.751	2545102.877	24262.381	25030.964	37882.052	50029.026	48808.444
15:15 Netherlands	14758.539	186997.884	104617.482	15279.097	29689.165	114594.561	94160.159	195712.265	165077.863	26325.228	580778.276	140563.474	156045.488	.000	361484.678	134683.149	3232240.899	122628.329	123519.703	80334.464	43997.905	35038.489
17:17 Poland	299702.991	106635.351	233473.636	301162.912	241345.871	232513.128	223681.926	65804.137	95537.166	223338.054	210044.349	209116.757	109357.242	361484.678	.000	155801.897	1906455.432	217463.555	221198.313	240426.662	251276.959	214854.518
18:18 Portugal	77292.133	13319.910	22368.145	76678.269	47914.336	20838.602	20513.416	42561.217	77978.230	49255.828	392223.833	15995.904	7179.751	134683.149	155801.897	.000	2696388.548	14690.204	16917.154	24394.332	35817.087	40575.722
19:19 Romania	3178575.907	2396244.781	3117845.114	3180511.114	3077694.033	3111880.198	3038188.683	2093847.531	2012459.541	2954517.606	1086248.986	3021789.443	2545102.877	3232240.899	1906455.432	2696388.548	.000	3043084.537	3059008.055	3131818.992	3113501.362	2864752.144
20:20 Slovenia	65649.045	42018.249	3981.507	62676.624	35187.495	2547.862	8711.474	93706.978	140482.857	47714.959	531446.143	2880.256	24262.381	122628.329	217463.555	14690.204	3043084.537	.000	1583.596	6481.134	20790.347	44257.629
21:21 Slovakia	62562.120	42756.090	3044.206	60290.506	35328.616	868.100	9219.543	96733.786	143022.378	46190.055	537690.126	2360.083	25030.964	123519.703	221198.313	16917.154	3059008.055	1583.596	.000	6425.455	20945.251	42914.023
22:22 Finland	36669.405	60671.387	3020.503	32607.538	15688.557	4845.019	3951.442	107624.556	141311.933	25568.195	551458.343	12422.173	37882.052	80334.464	240426.662	24394.332	3131818.992	6481.134	6425.455	.000	6508.101	27481.651
23:23 Sweden	15204.941	73970.398	14886.670	14057.151	3909.026	18238.175	14068.265	109504.494	125048.827	10380.144	530646.361	29445.365	50029.026	43997.905	251276.959	35817.087	3113501.362	20790.347	20945.251	6508.101	.000	10886.902
24:24 United Kingdom	11448.747	64317.670	36511.251	16331.550	7791.008	40652.981	35976.704	80940.675	76883.788	4810.884	427312.033	50341.972	48808.444	35038.489	214854.518	40575.722	2864752.144	44257.629	42914.023	27481.651	10886.902	.000

This is a dissimilarity matrix

Table A.2. Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	6	21	434.050	0	0	2
2	6	20	1666.519	1	0	4
3	3	22	3176.771	0	0	9
4	6	12	4753.809	2	0	13
5	5	10	6605.212	0	0	8
6	1	4	9030.294	0	0	14
7	2	14	11530.286	0	0	11
8	5	24	15113.782	5	0	10
9	3	7	18928.624	3	0	13
10	5	23	23863.917	8	0	15
11	2	18	29863.807	7	0	16
12	8	9	37630.379	0	0	16
13	3	6	45983.242	9	4	18
14	1	15	55187.427	6	0	15
15	1	5	75952.711	14	10	18
16	2	8	124085.514	11	12	17
17	2	17	202208.270	16	0	19
18	1	3	347409.039	15	13	20
19	2	11	551648.283	17	0	20
20	1	2	1050212.420	18	19	21
21	1	19	3632573.482	20	0	0

Table A.3. Dendogram Using Ward Linkage



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Comparative Analysis of Factor Markets for Agriculture across the Member States

245123-FP7-KBBE-2009-3

The Factor Markets project in a nutshell

Title	Comparative Analysis of Factor Markets for Agriculture across the Member States
Funding scheme	Collaborative Project (CP) / Small or medium scale focused research project
Coordinator	CEPS, Prof. Johan F.M. Swinnen
Duration	01/09/2010 – 31/08/2013 (36 months)
Short description	Well functioning factor markets are a crucial condition for the competitiveness and growth of agriculture and for rural development. At the same time, the functioning of the factor markets themselves are influenced by changes in agriculture and the rural economy, and in EU policies. Member state regulations and institutions affecting land, labour, and capital markets may cause important heterogeneity in the factor markets, which may have important effects on the functioning of the factor markets and on the interactions between factor markets and EU policies. The general objective of the FACTOR MARKETS project is to analyse the functioning of factor markets for agriculture in the EU-27, including the Candidate Countries. The FACTOR MARKETS project will compare the different markets, their institutional framework and their impact on agricultural development and structural change, as well as their impact on rural economies, for the Member States, Candidate Countries and the EU as a whole. The FACTOR MARKETS project will focus on capital, labour and land markets. The results of this study will contribute to a better understanding of the fundamental economic factors affecting EU agriculture, thus allowing better targeting of policies to improve the competitiveness of the sector.
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Partners	17 (13 countries)
EU funding	1,979,023 €
EC Scientific officer	Dr. Hans-Jörg Lutzeyer