ESPON

SIESTA

Spatial Indicators for a ‘Europe 2020 Strategy’ Territorial Analysis

Applied Research 2013/1/18

Scientific Report | Version 24/12/2012

Annex D

Education

EUROPEAN UNION
Part-financed by the European Regional Development Fund
INVESTING IN YOUR FUTURE

This report presents the final results of an Applied Research Project conducted within the framework of the ESPON 2013 Programme, partly financed by the European Regional Development Fund.

The partnership behind the ESPON Programme consists of the EU Commission and the Member States of the EU27, plus Iceland, Liechtenstein, Norway and Switzerland. Each partner is represented in the ESPON Monitoring Committee.

This report does not necessarily reflect the opinion of the members of the Monitoring Committee.

Information on the ESPON Programme and projects can be found on www.espon.eu

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

This basic report exists only in an electronic version.

List of authors

Dr Niamh Moore, University College Dublin

Dr Delphine Ancien, University College Dublin

Table of contents

1. Early leavers from Education and Training

1.1 Meaning of indicator

This series of maps illustrates early leavers from education and training. Early leaving is the percentage of the population aged 18-24 with at most lower secondary education (ISCED-2) and not in further education or training. Lower secondary education (ISCED-2) may be terminal or preparatory (for upper secondary education). These maps consider those who terminate formal education/training at this level. Comparability across countries is restricted due to different interpretations of participation in education and training but general patterns are observable (EUROSTAT). **Map 11** illustrates the geographical pattern of early school leaving across European NUTS2 regions in 2010. This is a headline target within the EU2020 Strategy with the majority of countries having established national targets on this indicator. **Map 12** shows the distance that particular regions have to go to meet national targets, while **Map 13** illustrates the change in early school leaving patterns between 2008 and 2010.

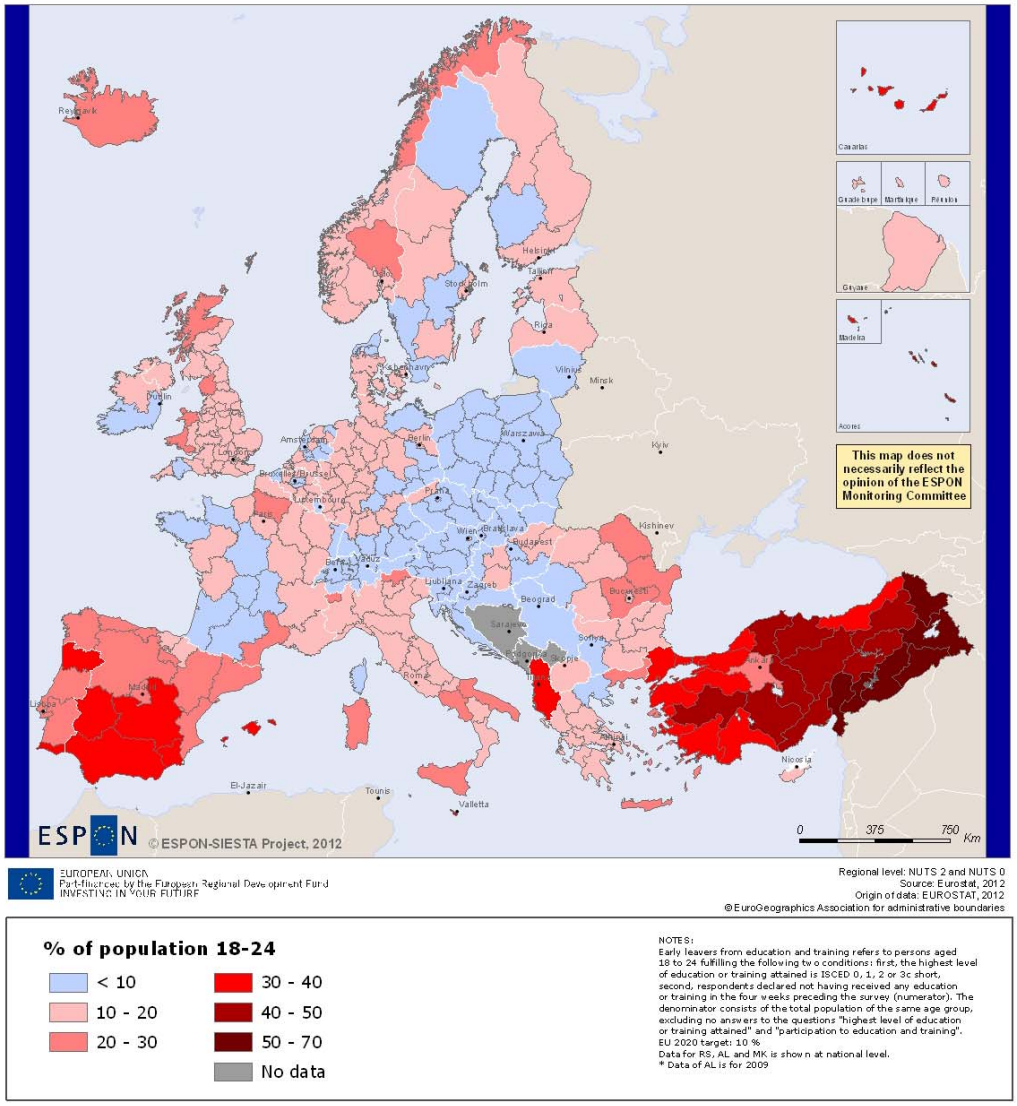
1.2 Relevance

The transition towards a more knowledge-intensive economy can only take place with increasing levels of education. The EU2020 Strategy associates high levels of early school leaving with a range of negative impacts on individuals, societies and economies (EU, 2011b). In order for all citizens to participate fully in society and to improve employability, a basic level of education is required. Education is thus a key factor in preventing poverty, achieving social inclusion objectives, and in ensuring that Europe can develop a 'smart growth' agenda as the growing numbers of knowledge-intensive jobs require higher levels of education and those with low levels of qualification could potentially be significantly excluded (FOCI, 2010). At a societal level, early school leaving can impose significant direct and indirect costs on national governments including

foregone earnings, welfare payments and indirect tax (King, 1999) as well as having a significant effect on future adult health (Hammarström and Janlert, 2002). The benefit of reducing the early School leaving rate by as little as 1% per year has been outlined by the Commission who argue that it 'would provide the economy each year with nearly half a million additional qualified potential young employees' (EU, 2011b, p.3). At an individual level, Carneiro (2006, p. 98) has argued that 'education directly affects individual employment and earnings and therefore it contributes to income inequality for a given cross section of individuals'. The importance of this indicator in contributing to a more smart, inclusive and sustainable Europe is clearly indicated by its inclusion as one of the headline targets of the EU2020 Strategy; the stated goal is to reduce school drop-out rates below 10% across Europe by 2020.

1.3 Early school leavers 2010

Early leavers from education and training, 2010*.
(People aged 18 to 24)



Map 11: Early School leavers as a % of 18-24 year olds, 2010

Table 1.1 Regions with lowest levels of early School leavers, 2010

State	*Region name*	*% 18-24 year olds*
Croatia	Sjeverozapadna Hrvatska	2.2
Slovakia	Západné Slovensko	2.3
Czech Republic	Pardubice	2.8
Poland	Małopolskie	2.8
Slovakia	Bratislavský kraj	2.8
Czech Republic	Jihovýchod	2.9
Croatia	Jadranska Hrvatska	4
Poland	Mazowieckie	4
Czech Republic	Střední Morava	4.1
Poland	Podlaskie	4.1

Table 1.2 Regions with highest levels of early School leavers, 2010

State	*Region name*	*% 18-24 year olds*
Turkey	Erzurum	46.4
Turkey	Samsun	47.5
Turkey	Manisa	48.2
Turkey	Kastamonu	48.3
Turkey	Hatay	51.9
Turkey	Gaziantep	55.2
Turkey	Mardin	59.2
Turkey	Şanlıurfa	63.6
Turkey	Van	68.7
Turkey	Ağrı	69.3

Table 1.3 Regions close to median levels of early School leavers, 2010

State	*Region name*	*% 18-24 year olds*
United Kingdom	Merseyside	12.7
Greece	Ipeiros	12.8
Hungary	Észak-Alföld	12.8
Germany	Braunschweig	12.9
France	Haute-Normandie	12.9
Germany	Hamburg	13.1
France	Champagne-Ardenne	13.1
Greece	Ionia Nisia	13.1
Belgium	Prov. Liège	13.2
Germany	Saarland	13.2

This series of maps examines early school leaving among 18-24 year olds, a major educational weakness identified in the EU2020S Communication. Across the EU-27, the average rate of early School leaving in 2010 was 14.9% but this masks significant variation across European territories. This is one of the headline indicators in the EU2020 Strategy which sets a 10% target for early School leaving across Europe. While an important indicator in its own right, it is also an extremely important target in terms of meeting a range of other economic and social inclusion objectives as disadvantaged and vulnerable groups are more likely to be affected by early school leaving (European Commission, 2012). The European Platform against Poverty and Social Exclusion notes that achieving the goal "would be a strong contribution to poverty reduction, since a sufficient level of skills and competences (including digital ones) is indispensable for the employability of young people in today's labour markets" (EU, 2010a, p.6). However the Annual Growth Survey of 2012 recognises the difficulty in achieving the target "on the basis of current national commitments" (EU, 2011a).

Across Europe, the only countries to already have exceeded the 10% target are Lithuania, Poland, Slovakia, Croatia, Slovenia, Serbia, Switzerland and Luxembourg. At a NUTS2 level, a number of other high-performing regions can be identified and these are heavily clustered in the

Danube space and a substantial portion of the Baltic Sea area. As well as those countries identified above, the other European territories to have already met the target include most of the Czech Republic (except Severozapad), all of Austria except Wien, three Belgian regions (Prov. Vlaams-Brabant, Prov. West-Vlaanderen, Prov. Brabant Wallon), five regions in the Netherlands, and twelve German regions almost all along the Southern and Eastern borders of the country with the exception of Unterfranken. In North West Europe and the Northern Periphery, the Southern and Eastern region of Ireland, two UK regions (Devon, Inner London), nine French regions across the country including Corsica, three Swedish regions and one region in each of Denmark and Finland have already met the target. In South East Europe, only Kentriki Makedonia is in the top achievers. Bulgaria (except Yugozapaden) and Romania (Vest) are outliers in Eastern Europe having much higher levels of early school leaving. However, in general there is a distinct East-West divide in Europe in relation to early school leavers, with generally better levels of retention in the former Eastern bloc countries. This divide may be attributable to specific policies in place. For example in Hungary in August 2010, the government introduced legislation to make school attendance a condition for state support of families with children of school age. In families where there is over 50 hours of unjustified absenteeism, state welfare mechanisms are suspended. Students in Hungary are also compelled to remain in education until the age of 18, unlike in most European countries where mandatory attendance ceases at 16. Our table illustrates that the top-performing countries in terms of early school leaving are Croatia, Slovakia, the Czech Republic and Poland. While data is limited for Croatia, the educational systems of the other three countries have specific characteristics that may encourage students to stay at school longer. While compulsory full-time education ceases in Poland at age 16, compulsory part-time education continues until age 18 (European Commission/EURYDICE, 2011). In both Slovakia and the Czech Republic, a key feature of post-16 education is the opportunity to undertake part-time or combined school and workplace courses across the range of educational offerings. This type of flexibility in educational offerings to service a greater variety of learners is something that the Commission have identified as important in diminishing the risk of early school leaving (European Commission, 2010) and could perhaps be considered by other countries and regions.

Approximately 30% of regions identified broadly above have already met the EU2020 target; a further 30% of NUTS2 regions examined are within 5% of the EU2020 target. Past experience has shown that while

improvements can be made, the pace at which this occurs can be relatively slow. From 2000-2009, the early school leaving rate was reduced proportionally by nearly 20% from 17.6% to 14.1% (European Commission, 2010). This drop of 3.5% percentage points in nine years suggests that those regions most likely to meet the EU2020 target by the anticipated deadline are those already within 5% of the stated goal. These include much of North West Europe including the Benelux countries, Germany, France, northern Italy, parts of the United Kingdom, the Border, Midlands and Western part of Ireland as well as large areas of the northern Baltic Sea region. Many of these countries have put specific interventions in place to tackle early School leaving and re-integrate of early school leavers into education and training (European Commission, 2012). Such public / government initiatives include *Youth Guidance Centres* in Denmark which are collaborations between educational, social and employment services, the *Practice Certificate* in Norway which is a combination of specialist education and work placements, and *Youthreach* in Ireland which focuses on individual guidance and the development of an action plan. All of these programmes are targeted at taking early action to prevent, target and rapidly address school drop-out rates (EU, 2010b). High incidences of early school leaving also seem to correspond with more remote areas and coastal zones. For example, 20-30% early school leaving is evident in Iceland as a whole; Highlands and Islands, West Wales and the Valleys and Cumbria in the United Kingdom; Nord-Norge and Hedmark og Oppland in Norway most of Portugal, the northern half of Spain, Corsica and Sicily. The potential of e-learning could possibly be harnessed in an effort to improve accessibility to educational opportunity but would need to be considered as part of broader infrastructural development.

Significantly, 37 NUTS2 regions have early school leaver rates of over 30% in 2010. These are all in Southern Europe especially Malta, large parts of Spain, some Portuguese regions and in Turkey, with the exception of Ankara. The Commission has suggested that 'some regional and seasonal labour markets (e.g. tourism, construction) can attract young people out of school into unskilled jobs with poor prospects. The availability of such jobs ... motivates many young people to leave education and training prematurely' (EU, 2011b, p.5). The structure of the economies in these countries may contribute to these high patterns of early school leaving and evidence from Spain would support this contention. For example, a high proportion of young people in this country left school during the economic boom in order to enter the labour market when lots of low qualification jobs were created in construction, tourism

and basic services. This context combined with an acknowledged structural problem in terms of the need to develop a national vocational education and training system in Spain that would contribute towards the reduction of labour market and education mismatches (Isusi, 2010) may explain their very poor performance of this indicator. In addition, compared with the EU-27, Spain has a 26% lower public expenditure on secondary education in terms of GDP (Fernández-Macías et al., 2012). Reducing early school leaving in Spain will be critical in addressing and reaching a range of EU2020 indicators as the Spanish Labour Force Survey has demonstrated that the unemployment rate among young people aged 25–29 years with tertiary-level qualifications was only 14% in 2009 compared with 36% among those with only primary compulsory education (Spanish National Statistics Institute). An additional issue for some regions of Greece, Spain and Italy that score particularly poorly is that more than 40% of young migrants are early school leavers and thus a targeted approach is necessary (European Commission, 2011). Reducing early school leaving will be a key priority for these lagging regions if they seek to re-shape their economies towards more knowledge-intensive activity.

While there is generally an East/West divide in Europe in relation to early school leaving, the exception is Turkey. The table demonstrates that the 10 regions performing most poorly on this indicator across Europe are all in Turkey. This may be due to a range of structural as well as socio-economic factors. Compulsory education ends in Turkey at the age of fourteen following the completion of the primary cycle (8 years). The Primary Education Diploma (*Ilkogretim Diplomas*ı) is awarded to those students who successfully complete the 8 year basic education program and there is no expectation of secondary education. Ankara is the best performing Turkish region with an early school leaving rate of 26.4%, followed by other major cities Antalya and Izmir (32.3% and 32.6% respectively). The OECD (2007) has identified lower participation in education by females as an important policy issue and any measures targeted at this issue would have an overall positive effective in lowering early school leaving. There is generally an urban-rural divide with more rural and remote regions, including mountainous and outermost regions, performing most poorly on the indicator. This may be due to a number of factors including access to education which is not universal and has been described by the OECD (2007) as "selective and limited", larger average class sizes and student-teacher ratios (29.6 in Turkey compared with 22.75 in OECD) and lagging expenditure on education compared with the OECD average. Large parts of Turkey are also heavily agriculturally-based

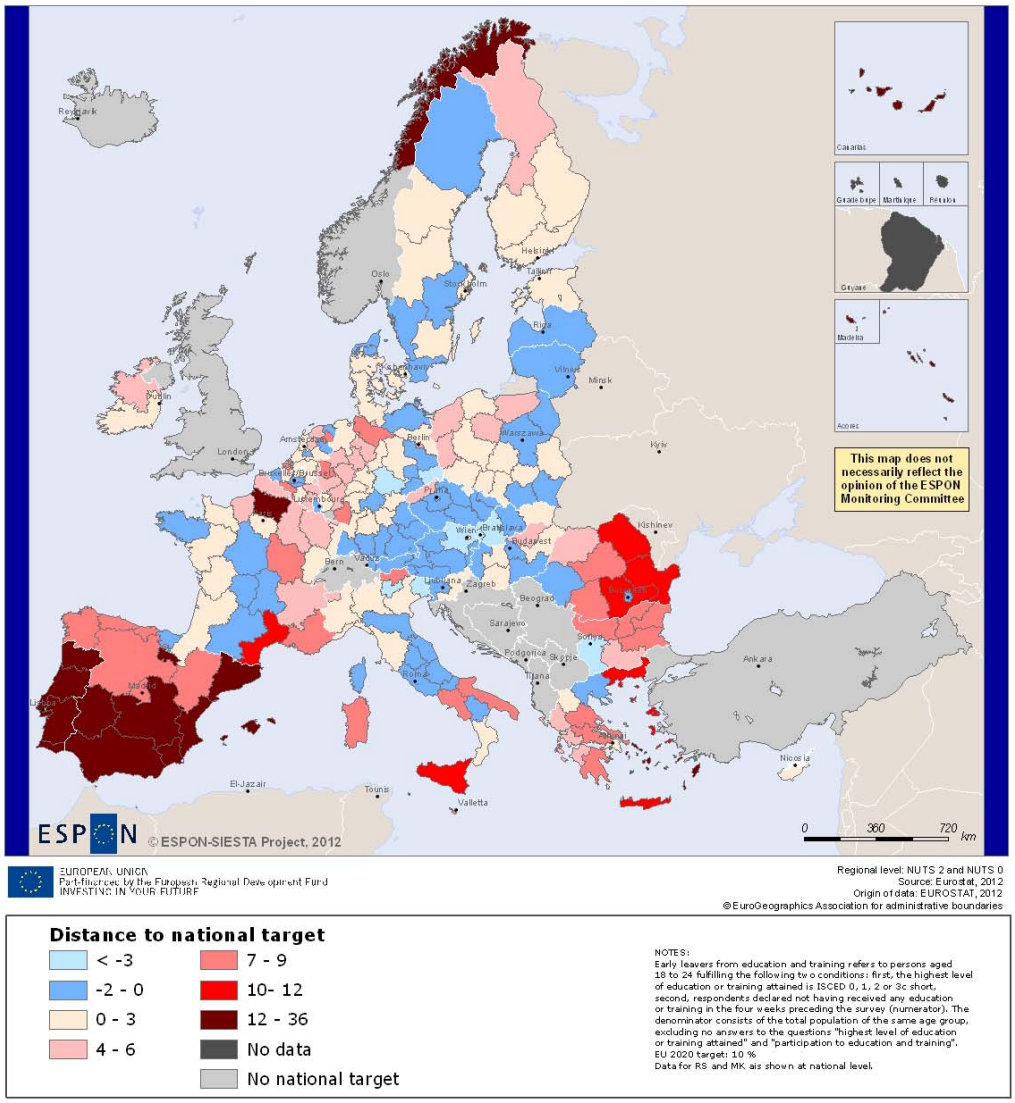
requiring relatively low education and skills levels, while immigrant children living in shanty towns (*gecekondu*) in urban areas have less access to education.

In summary:

- Early school leaving patterns across Europe may be broadly characterised by four quadrants: a NE area (including most of the Danube space and Baltic Sea) that has very low levels of school leaving; North-West Europe where early School leaving is close to the EU2020 target or should be within reach of it over the time period in question; a South-West quadrant where targets are significantly higher than the EU average but the distance to achieving them remains very high; Turkey where the completion of primary education is the norm and even lower secondary education remains limited.
- Aligning educational provision and standards more closely to the needs of the labour market is crucial in transitioning to a more knowledge-based or smart economy. The large proportion of regions not likely to meet the EU2020 target will have a negative impact on the ability of Europe to emerge from the recession and to make this shift. Comparing rates of early school leaving with, for example, indicators such as Human Resources in Science and Technology (HRST), illustrates that educational polarisation is taking place within Europe. Some of those regions with high levels of HRST simultaneously have high levels of early school leaving and this should be a key concern for those responsible for social exclusion and cohesion agendas. Support for education from European Structural Funds should therefore focus not only on convergence regions but also on other parts of the European territory where there is distinct regional disparities compared with national averages.

1.4 Distance to national targets on early school leaving

Early leavers from education and training, 2010. Distance to 2020 national targets



Map 12: Distance to national targets on early school leaving, 2010

Table 2.1 Regions with shortest distance to national targets, 2010

Member State	*Region name*	*% points distance*
Bulgaria	Yugozapaden	-6.70
Austria	Niederösterreich	-3.80
Germany	Thüringen	-3.70
Slovakia	Západné Slovensko	-3.70
Italy	Provincia Autonoma Trento	-3.70
Italy	Friuli-Venezia Giulia	-3.40
Germany	Dresden	-3.20
Slovakia	Bratislavský kraj	-3.20
Austria	Burgenland (A)	-2.90
Belgium	Prov. Vlaams-Brabant	-2.90

Table 2.2 Regions with furthest distance to national targets, 2010

Member state	*Region name*	*% points distance*
Spain	Castilla-La Mancha	18.2
Spain	Cataluña	19.70
Spain	Comunidad Valenciana	20.50
Portugal	Algarve	20.70
Portugal	Norte	20.90
Spain	Ciudad Autónoma de Melilla	21.20
Spain	Illes Balears	21.70
Portugal	Região Autónoma da Madeira	27.30
Spain	Ciudad Autónoma de Ceuta	30.10
Portugal	Região Autónoma dos Açores	35.20

Table 2.3 Regions closest to median distance to national targets, 2010

Member state	*Region name*	*% points distance*
Germany	Mittelfranken	1.90
Germany	Trier	1.90
Finland	Länsi-Suomi	1.90
Ireland	Southern and Eastern	1.90
Poland	Pomorskie	1.90
Denmark	Syddanmark	2.00
France	Île-de-France	2.00
Poland	Opolskie	2.00
Sweden	Mellersta Norrland	2.00
Austria	Wien	2.10

Map 12 illustrates the distance between the actual drop-out rates of early school leavers and national targets. Although, an overarching target of 10% has been established as one of the headline targets in the EU2020 documentation, there is significant variation across Europe. The most ambitious targets, well below the European average, have been set by countries that are already doing very well in terms of minimising early school leaving. Poland, the Czech Republic and Slovenia have targets of 4.5-5.5%, half the European average while Spain has a target of 15%, Italy has a target of 15.5% and Malta has set a goal of 29%. In the discussion and tables associated with Map 11, Portugal emerged as one of the most challenged countries in terms of addressing early school leaving but they have set an ambitious goal of matching the European 10% target. The United Kingdom, Turkey, Norway, Macedonia, Iceland, Croatia and Switzerland have not identified any national targets on this indicator. The discussion on distance to national targets should thus be read within this very varied context.

The table illustrates that those regions closest to meeting national targets are generally located in the Danube space, part of the Baltic Sea region and western France. Of 233 NUTS2 regions for which the data was available, only 73 have already met or exceeded their EU2020 target. Those top ten performers on distance to 2020 early school leaving targets fall into two categories; a) those who have ambitious targets and thus can be characterised as excellent absolute performers, particularly the two

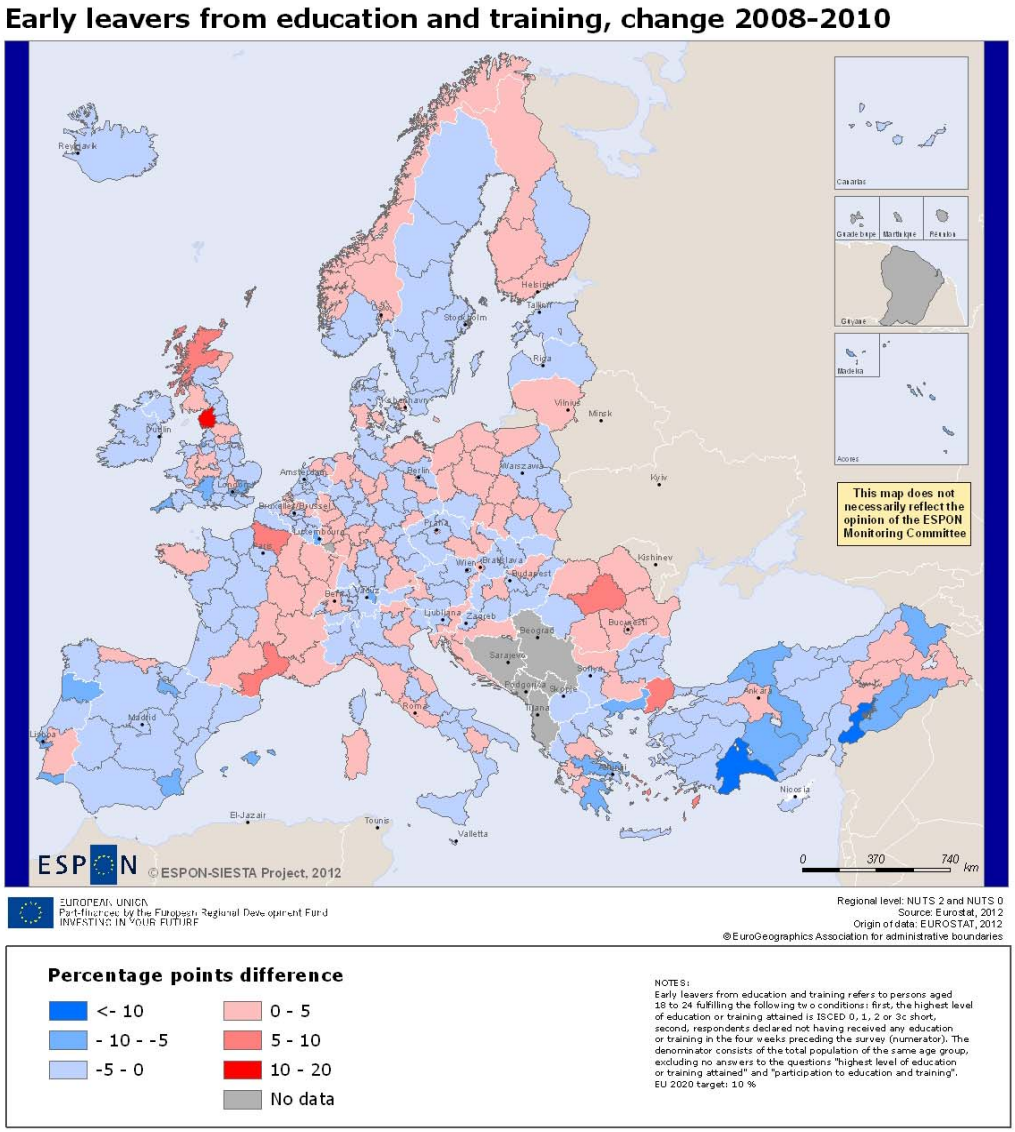
regions of Slovakia, two regions of Austria and Prov. Vlaams-Brabant in Belgium, and b) those who have set targets well above the EU2020 target and thus are less ambitious such as the two Italian regions which are measured relative to a 15-16% target. While Yugozapaden in Bulgaria has an 11% target, it exceeds this by a significant margin.

At the other end of the spectrum, Spain and Portugal emerge as the poorest performing regions. In the case of Portugal this is explained by their ambition to meet the EU2020 target even though they have significant historical legacies to overcome in relation to early school leaving. The outermost regions of Portugal - Região Autónoma da Madeira and Região Autónoma dos Acores – have significant difficulties in relation to meeting targets and this may be associated with other factors such as the lack of high-skilled jobs in for example research and development and thus a lack of incentive to remain in education beyond a compulsory level. These regions are also economically dominated by tourism and the Commission have already recognised the problem of this kind of economic activity in luring students prematurely from education. Similarly the outermost regions of Spain, notably Ciudad Autónoma de Melilla, Ciudad Autónoma de Ceuta and Illes Balears have a very large distance to go to meet the national target of 15%, significantly higher than the average EU goal. However, more urbanized parts of Spain such as Cataluña, centred on Barcelona, and Comunidad Valenciana are also 20 percentage points or more above the national target. This data provides a picture of some concern. Already Spain has one of the highest levels of youth unemployment in Europe and persistently high early school leaving rates will only exacerbate this situation. The flagship initiative 'An Agenda for New skills and Jobs' suggests that "partnerships at regional and local levels between public services, education and training providers and employers, can effectively identify training needs, improve the relevance of education and training, and facilitate individuals' access to further education and training". This may be of specific relevance to Spain as the current low skills base will reduce the ability of youth to take up employment when a recovery comes and will hamper the potential of the country for economic recovery. Research has previously shown that early school leavers are at higher risk of becoming long-term unemployed and thus a significant drain on the public finances. The educational profile in South-West Europe may be an explanatory factor in the comparatively lower levels of R&D investment in this part of the territory as good levels of general education as well as higher education are considered crucial in supporting innovation (KIT, 2011).

In summary:

- Countries with an initial advantage in relation to early school leaving are accelerating ahead and show significant success in exceeding already ambitious targets. In contrast, in those regions already lagging and with less ambitious targets, early school leaving rates remain stubbornly high and new initiatives need to be urgently implemented drawing perhaps on the experience and approach of more successful regions.
- South-West Europe is identified as a part of the European territory in need of specific interventions or support to reach national targets. This is particularly the case in Spain, where national targets are less ambitious than in Europe generally, and yet the distance to reaching them is still among the highest.

1.5 Changes in early school leaving, 2008-2010



Map 13: Changes in early school leaving, 2008-2010

Table 3.1 Regions with greatest reductions in early School leaving

State	Region name	% change, 2008-2010
Greece	Ionia Nisia	-17
Turkey	Gaziantep	-14.1
Turkey	Antalya	-10.8
Portugal	Região Autónoma da Madeira	-9.5
United Kingdom	Cornwall and Isles of Scilly	-9.4
Spain	La Rioja	-9.1
Portugal	Norte	-8.8
Portugal	Região Autónoma dos Açores	-8.7
Turkey	Şanlıurfa	-8.6
Portugal	Algarve	-7.9

Table 3.2 Regions with greatest increases in early School leaving

Member state	*Region name*	*% change, 2008-2010*
Germany	Rheinhessen-Pfalz	5
France	Lorraine	5
Romania	Nord-Vest	5
Romania	Centru	6.2
United Kingdom	Highlands and Islands	6.4
France	Picardie	6.8
France	Languedoc-Roussillon	7
Greece	Notio Aigaio	7.2
Turkey	Tekirdağ	7.9
United Kingdom	Cumbria	14.8

Table 3.3 Regions closest to median change in early School leaving

Country	*Region name*	*% change, 2008-2010*
Slovakia	Západné Slovensko	-1
Italy	Puglia	-0.9
Switzerland	Zürich	-0.9
Germany	Oberfranken	-0.9
Germany	Schleswig-Holstein	-0.9
Poland	Mazowieckie	-0.9
Turkey	Hatay	-0.9
Germany	Schwaben	-0.8
United Kingdom	East Anglia	-0.8
Germany	Gießen	-0.8

Overall, there is no real discernible geographic pattern in terms of changes in early School leaving at a European level. In general terms, progress is being made to move towards the EU2020 target with a change in % of early school leavers from 17.1% in 2002 to 14.1% in 2010. Significant change in terms of % point difference is evident in those areas that have had high early school leaving rates. Nine of the top ten regions, measured in % point reduction in early school leaving, are in Greece, Turkey, Portugal and Spain suggesting that policies in place in these countries are having some positive effects. The four Portuguese regions in the table showing greatest improvement correspond with those that had the furthest distance to go to meet their 2020 targets, illustrating the dramatic changes that have occurred in a short time. If this rate of change was to continue in the coming years, these regions could come very close to achieving their national targets.

The greatest improvements in reducing early school leaving have generally occurred in the European periphery or lagging regions of Portugal, Greece, Turkey and Spain. The Greek region of Ionia Nisia has experienced the greatest actual change, from 30.1%-13.1%, as well as the greatest proportional change (56.5% reduction). However, an examination of the change data also illustrates that regions and countries already doing very well on this indicator such as Slovakia, Czech Republic and Austria demonstrate some of the greatest proportional reductions. In fact, Sjeverozapadna Hrvatska in Croatia which had the lowest levels of

early school leaving in Europe in 2010 (2.2%) also has one of the greatest rates of change from 2008-2010, perhaps demonstrating a desire on the part of policymakers not to become complacent.

Nineteen regions, primarily in the Danube space but also in France (4 regions), the United Kingdom (4 regions) and Luxembourg have over 30% reduction in early school leaving from 2008-2010. Some of these achieved this from a relatively high base, such as Cornwall and Isles of Scilly in the United Kingdom, where early school leaving was reduced from 21.3% in 2008 to 11.9% in 2010. This region is the only European Social Fund Convergence area in England and these successes may be linked to the ESF/ERDF funding in place, at least 23% of which has been ring-fenced for work with young people aged 14 to 19 who are not in education, employment or training (NEET) or at risk of becoming NEET (South West Regional Employment and Skills Partnership, 2009). Projects such as ACE2 have been funded under Priority 5- Improving the skills of the local workforce - to support young people who are NEET and at risk back into school and college by developing a suite of on line learning resources designed to attract, motivate and re-engage.

Turkey also emerges quite strongly in terms of greatest reductions in early school leaving but this comes against a backdrop of exceptionally high school leaving rates ranging from 46.4 to 69.3%. This rate of decrease will need to be maintained and intensified significantly to bring Turkey somewhat in line with the EU and to have a realistic chance of meeting or coming near EU targets. However, generally the pace of improvement is slow with only 10 regions showing positive change in excess of 5% in the time period examined.

At the opposite end of the spectrum, are two worrying trends from a policy perspective. The first is that 8 regions within the 10% target have increased their early school leaving rates so that they are now above the 10% target ranging up to 14.2%. These include the three neighbouring regions of Alsace and Lorraine (in France) and Karlsruhe in Germany, two Flemish regions (Prov. Antwerpen and Prov. Limburg), Kozep-Dunantul in Hungary, Pohjois-Suomi in Finland and north-east Scotland. There is no one explanation for this pattern and it is not possible to make a link between this trend and R&D investment for example (Alsace and Lorraine have very low % GDP investment in R&D but Pohjois-Suomi is the 5th highest in Europe) or general educational levels (as north-east Scotland is in the top 10 in terms of highest share of population aged 30-34 with

tertiary attainment) (EU, 2011c, p. 18). However, in the case of Kozep-Dunantul in Hungary, accessibility is a major issue and this has already been recognised in the Regional Operational Programme for the region of Central Transdanubia in Hungary for the 2007-13 periods. One of the primary goals of this programme is to reduce territorial differences in terms of access to public services, specifically including schools.

Secondly, of the 324 regions studied 106 showed increases in early school leaving with thirteen regions showing proportional increases of over 40% in the 3-year time period. The majority of these regions are in Northwest Europe – United Kingdom (2 regions), France (4 regions), Germany (2 regions), Romania (2 regions), and one region in each of Belgium, Poland and Croatia. A particularly problematic region is Cumbria in the United Kingdom which more than doubled its early school leaving rate from 2008-2010. Within Cumbria there are high levels of deprivation, with areas of the county falling in the most deprived 10% nationally. Although deprivation is most prevalent in the urban areas there are also pockets of deprivation in some of the counties' most rural communities (Cumbria County Council, Cumbria NHS and Cumbria Intelligence Observatory, 2012); research has illustrated that those experiencing poverty and exclusion are at greatest risk of early school leaving and in an economic recession this may become particularly acute.

2. Non-completion of compulsory education in Urban Audit cities

2.1 Meaning of indicator

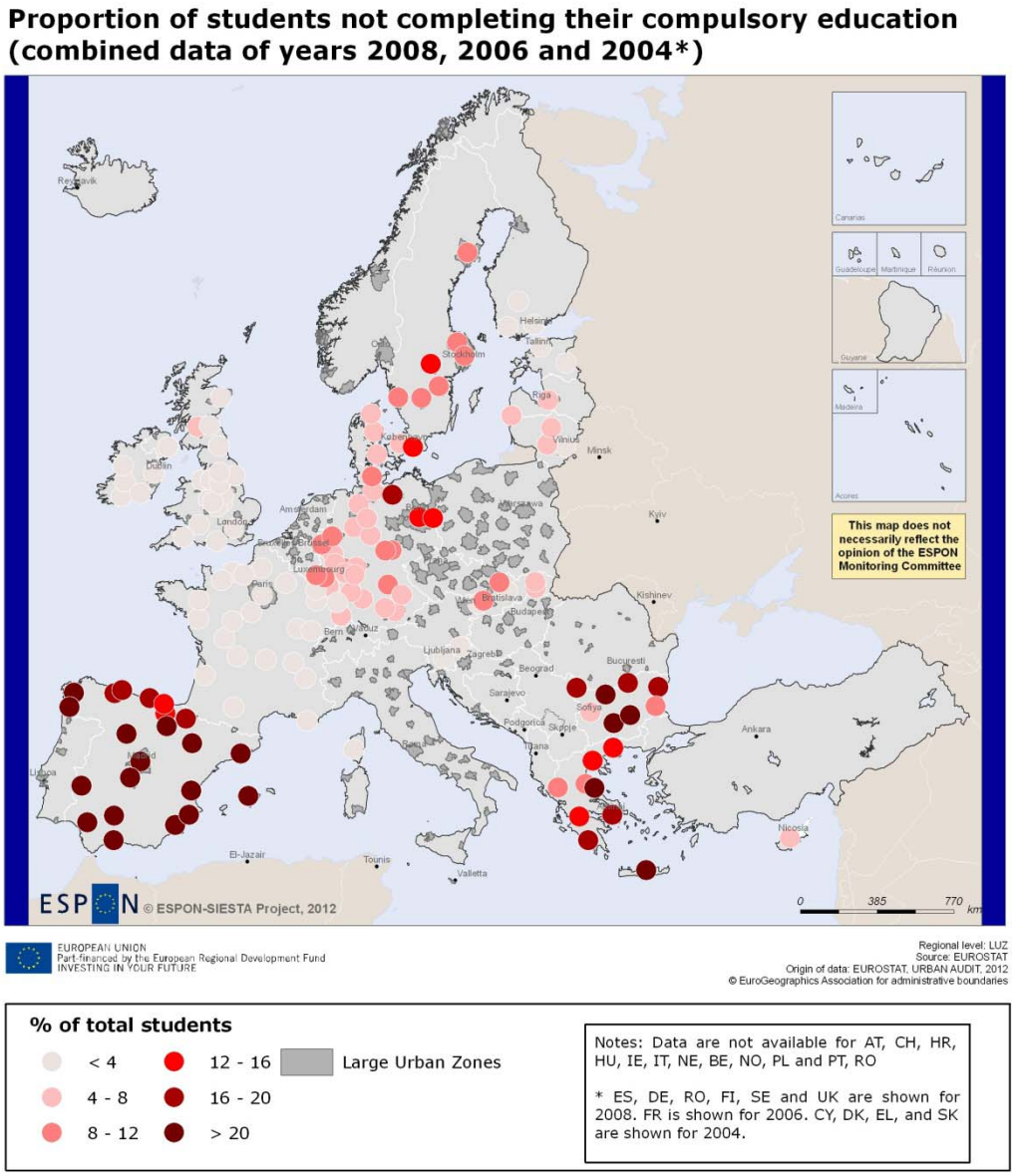
Map 14 illustrates, at an urban level, the percentage of all students who did not complete their compulsory education. The age at which compulsory education ceases varies by country but in Europe generally, mandatory school attendance ceases on the completion of lower secondary school (ISCED-2). Map 14 is produced using a combination of data from the years 2004, 2006 and 2008 for Urban Audit Cities. The map provides a general picture of early school leaving at an urban scale in Europe but is limited by the lack of data for some cities in countries including Austria, Belgium, Czech Republic, Italy, Hungary, Malta, Netherlands, Poland, Slovakia, Romania and Portugal. The most recent

data mapped is 2008, a year that marked the dramatic onset of European economic crisis. The current situation is likely to be somewhat different and therefore the map must be interpreted within this historic context.

2.2 Relevance

The EU2020 Strategy associates high levels of early school leaving with a range of negative impacts on individuals, societies and economies. Youth unemployment is a major issue in Europe at present and those who fail to complete their compulsory education are at greater risk of becoming long-term unemployed. The Youth on the Move flagship initiative identifies youth employment as a critical issue as young people 'are key to achieving the Europe 2020 objectives' (EU, 2010b, p. 2). As discussed in relation to the previous maps, those with lower educational attainment are at greater risk of a series of social, physical and psychological problems in adult life and also become a major drain on public finances. Education is thus a key factor in preventing poverty, achieving social inclusion objectives (EU, 2010c), and in ensuring that Europe can develop a 'smart growth' agenda. The competitivess of city-regions in particular is dependent on the development of higher-quality human capital through the education system (FOCI, 2010). Reducing early school leaving to less than 10 % by 2020 is a headline target for achieving a number of key objectives in the Europe 2020 strategy and one of the five benchmarks of the strategic framework for European cooperation in education and training (EU, 2009).

2.3 % of students not completing compulsory education



Map 14: Proportion of students not completing compulsory education, combined years

Table 4.1 Urban Audit cities with the lowest proportion of compulsory education non-completers

Member state	*City name*	*% of students*
Finland	Oulu	0.00
Finland	Tampere	0.10
Finland	Turku	0.10
Finland	Helsinki	0.30
Finland	Helsinki Kernel	0.40
Ireland	Cork	0.60
Ireland	Limerick	0.70
Ireland	Galway	0.70
Ireland	Waterford	0.70
Ireland	Dublin	0.90

Table 4.2 Urban Audit cities with the highest proportion of compulsory education non-completers

Member state	*City name*	*% of students*
Spain	Santa Cruz de Tenerife	29.10
Spain	Las Palmas	29.50
Spain	Badajoz	30.20
Spain	Palma di Mallorca	30.60
Spain	Malaga	32.40
Spain	Toledo	32.70
Spain	Cordoba	32.70
Spain	Sevilla	33.20
Spain	Alicante	36.90
Spain	Valencia	37.30

Table 4.3 Urban Audit cities closest to median proportion of compulsory education non-completers

Member state	*City name*	*% of students*
Germany	Bielefeld	5.80
Germany	Stuttgart	5.90
Denmark	Aalborg	6.00
Lithuania	Kaunas	6.00
Germany	Bonn	6.50
Bulgaria	Sofia	6.60
Germany	Dusseldorf	6.60
Germany	Koln	6.70
Germany	Gottingen	6.70
Germany	Frankfurt Am main	7.10

Reducing early school leaving across the European territory to 10% by 2020 is one of the key headline targets of the EU2020 Strategy. Recent data from EUROSTAT (2012) suggests that the share of early school leavers stands at 13.5%, down from 14.1% in 2010 and from 17.6% in 2000. However, these averages mask distinct regional and other disparities. Early school leaving is a complex phenomenon influenced by educational, individual and socio-economic factors (EU, 2011c) but Map 14 illustrates that there is also a specific spatial dimension to this process. Information on early school leaving is mapped for 161 cities but in interpreting this map, it is important to bear in mind that a) that some data has been excluded from the analysis and b) some data must be interpreted carefully due to reliability considerations derived from the small sample size and c) there are many cities in the ESPON space for which data was not available.

Table 1.1, associated with Map 11, illustrated that the regions with the lowest levels of early school leavers were in Croatia, Slovakia and Poland. While data is not available at the urban level for Croatia and Poland, the data for Slovak cities would suggest that urban areas may generally be doing better than regional averages suggest. For example, while the region of Bratislavský kraj is the fifth best performing region in Europe (2.8%), Bratislava is significantly better than the regional average with a 0.9% rate of non-completion. Similarly in Slovenia, Ljubljana and Maribor show early school leaving rates of 1% and 0.9% respectively, much lower than the already successful regional averages of 5.3% and 4.7%. Urban areas are thus generally performing much better in relation to school completion than rural areas, and this has been acknowledged in relation to a number of other European regions. The National Report on Strategic Framework for European Cooperation in Education and Training ("ET 2020"): Lithuania illustrates that although the country has already met EU2020 targets with an average early school leaving rate of 8.1% in 2010, when this figure is disaggregated it illustrates that urban areas have a 3.7% rate while rural areas have a 15.7% non-completion rate. The median statistics generated in this analysis suggest that this is a general pattern across the continent with cities demonstrating a median early school leaving rate of 6.6% (combined years 2004-2008) compared with a general regional average of 13% (2010). Non-completion is therefore generally not a big city phenomenon although there may be some pockets of disadvantage that are problematic. This spatial variation is an important factor to be considered by policy-makers.

Map 14 and Tables 4.1-4.3 illustrate that the best performing cities for which we have data are in Finland and Ireland, with non-completion rates

of less than 0.5% in the five Finnish cities and rates of between 0.6%-1% in the five Irish cities. In fact, Ireland is an excellent example of the urban-rural divide with regional early school leaving rates ten times the magnitude of the city only rate. The top 10 cities identified in the tables are important educational centres, with well-regarded higher education institutions from universities to technological institutes. These top performing cities are also important European centres for NBIC, high-tech and knowledge-intensive economic activities suggesting that a link exists between attitudes and behaviour to secondary schooling and perceived future employment prospects. A general pattern of high-performance on this indicator is evident across the British Isles, northwest Europe including all of France and an eastern Baltic Sea corridor from Finland into Estonia. However the case of Ireland illustrates that good educational levels are not sufficient to ensure economic growth and success; the recent crisis has resulted in high levels of unemployment even among a very highly-skilled populace.

Of the 161 cities examined, 69 of them had early school leaving rates of less than 5% and 110 exhibited rates of 10% or less. This suggests that cities are playing a key role in trying to achieve the EU2020 headline target on early school leaving. The Seventh progress report on economic, social and territorial cohesion argues that in order to increase employment and reduce poverty and exclusion, cities need to address urban deprivation and the disconnection from the labour market, especially in the EU-15 (EU, 2011c). However the data presented here suggests that the labour market disconnect is being more severely felt in rural areas, or at least in those areas outside of major urban centres. The exception is in southern Europe cities where the highest early school leaving rates are apparent.

From an urban perspective, 23 cities demonstrate an early school leaving rate of more than 20% and these are primarily located in Spain with high rates also evident in Irakleio and Volos (Greece) and Pleven, Stara Zagora, Plovdiv and Vidin in Bulgaria. While parts of Bulgaria show high rates of early school leaving, there is significant national variation from 6% in Sofia to 24% in Plovdiv. The most consistent weak performer in Europe is Spain and this is consistent with the previous maps, especially Map 11. The ten poorest performing cities in Europe for which data is available are all located in Spain, and in centres that are important tourist nodes and/or experienced a construction boom in the early 2000's. While there may be some structural problems with the educational system and it is undoubted that the boom in low-skilled employment such as tourism and construction did play a role in luring students from education,

immigration is a key explanatory factor particularly in many cities. A recent paper on the Spanish incidence of early school leaving suggests that "increase in the rate of early school leaving in the last few years is arguably not the result of a failure of the Spanish educational system … but of the arrival of large number of immigrants with lower educational profiles" (Fernández-Macías et al., 2012, page unknown). Population growth and thus the labour market in Europe depend on immigration (European Communities, 2007). Given that most migrants tend to arrive and settle in, or close to, urban areas this may be a significant variable in explaining the poor Spanish performance. Yet Spain has been identified as a potential hotspot of growth given its young age profile and migration structure (DEMIFER, 2010) and has significant potential and internal resources to mount an economic recovery. However addressing early school leaving to ensure this demographic has the requisite skills to sustain growth and investment is crucial and a formal recommendation was made on 30 May 2012 to the Spanish government from the European Commission to address early school leaving as part of reforms to increase stability, growth and employment. Five other countries - Denmark, Hungary, Italy, Latvia and Malta – also received this recommendation. Our dataset indicates that non-completion rates in Danish and Latvian cities are not particularly high, supporting the findings above and broader research that early school leaving is a particularly rural or regional phenomenon (Australian Council for Educational Research, 2000).

3. Population aged 30-34 with tertiary education

3.1 Meaning of indicator

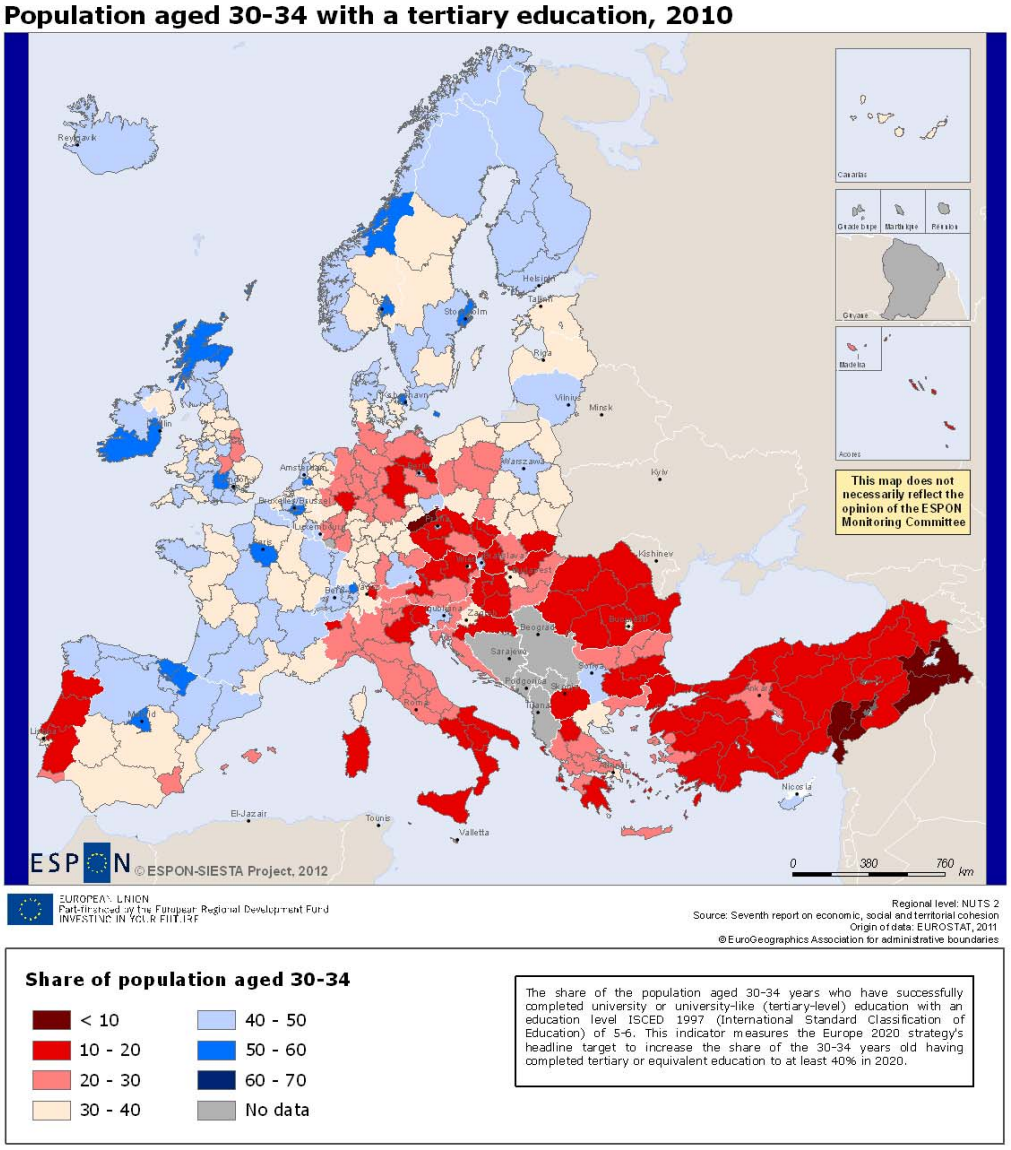
As economists have long-argued (see for example Lucas, 1988), human capital, as developed in particular through education, is key to sustained economic development and growth. High levels of higher education tend to be correlated with higher levels of productivity. Maps 15, 16 and 17 examine the percentage of the population aged 30-34 with a tertiary education at regional (NUTS2) level. This indicator and/or associated headline targets is clearly made reference to in several EU Communications, including the EU2020 Strategy, the Annual Growth Survey (EU, 2011a), the Fifth Report on Economic, Social and Territorial Cohesion (EU, 2010d), and a number of flagship initiatives such as Innovation Union (EU, 2010e), Youth on the Move (EU, 2010b), and An Agenda for New Skills and Jobs (EU, 2010f). **Map 15** illustrates the percentage of the population aged 30-34 (expressed as a percentage of the total population of a given NUTS2 region) who had a tertiary education in 2010. **Map 16** demonstrates the relationship between this statistic and national targets identified as part of the EU2020 Strategy; this relationship is expressed as percentage point difference. **Map 17** depicts the change from 2008-2010 in the share of population aged 30-34 with a tertiary education, expressed as a percentage point difference.

3.2 Relevance

Barro and Lee (2010, p. 1) argue that "the level and distribution of educational attainment ... have an impact on social outcomes, such as child mortality, fertility, education of children, and income distribution". It is therefore no surprise that one of the main concerns of the Europe 2020 Strategy is tertiary education, which is conceived as a key factor in helping EU Member States and regions attain the smart growth objectives of Europe 2020". This is particularly addressed in the 'Youth on the Move' flagship initiative that aims "to respond to the challenges young people face and to help them succeed in the knowledge economy" (EU, 2010b, p.3). A priority of the Europe 2020 Strategy is to help integration into a

labour market that is increasingly based on the knowledge-economy, by ensuring that the particular skills and aptitudes gained through tertiary education are acquired by as many young people as possible. This will aid the search for well-paid employment in various sectors of the economy, in particular in the estimated "35% of all jobs that will require high-level qualifications [by 2020], combined with a capacity to adapt and innovate, compared to 29% today" (EU, 2010b, p.2). Higher-level education also increases employability by facilitating greater mobility. With that in mind, the EU headline target of at least 40% of tertiary or equivalent education attainment among the 30-34-year-old group by 2020 was set by the Europe 2020 Strategy. This is a minimum headline target that Europe needs to achieve in order to compete with other advanced capitalist regions of the world where one finds rates of higher education attainment over 40% (e.g. in the United States) and even 50% (e.g. in Japan).

3.3 % of population aged 30-34 with tertiary education



Map 15 Proportion of 30-34 year olds with tertiary education, 2010

Table 5.1 Regions with highest % of 30-34 year olds with tertiary education (2010)

State	*Region*	*% of 30-34 year olds*
United Kingdom	Inner London	66.0
Spain	País Vasco	59.9
Denmark	Hovedstaden	58.6
Norway	Oslo og Akershus	57.6
Belgium	Prov. Vlaams-Brabant	55.9
Norway	Trøndelag	55.4
Belgium	Prov. Brabant Wallon	54.8
Sweden	Stockholm	53.2
France	Île de France	52.6
Netherlands	Utrecht	52.6

Table 5.2 Regions with lowest % of 30-34 year olds with tertiary education (2010)

State	*Region*	*% of 30-34 year olds*
Turkey	Kastamonu	12.0
Turkey	Malatya	12.0
Turkey	Balikesir	11.5
Portugal	Região Autónoma dos Açores	11.3
Turkey	Agri	10.2
Turkey	Hatay	9.7
Turkey	Gaziantep	8.9
Turkey	Van	8.8
Czech Republic	Severozápad	8.4
Turkey	Mardin	8.1

Table 5.3 Regions closest to median % of 30-34 year olds with tertiary education (2010)

State	*Region*	*% of 30-34 year olds*
Poland	Łódzkie	33.3
France	Languedoc-Roussillon	33.0
United Kingdom	Merseyside	32.9
France	Bourgogne	32.8
Greece	Kentriki Makedonia	32.8
Germany	Tübingen	32.6
Poland	Podkarpackie	32.4
Latvia	Latvia	32.3
Germany	Mittelfranken	32.2
Spain	Canarias	32.1

As highlighted in the Youth on the Move Communication (EU, 2010b), the proportion of 30 to 34 years-olds with a tertiary education in Europe is significantly lower than in parts of the United States (over 40%) and Japan (over 50%). The average rate for the whole of the European Union (EU27) was 33.6% in 2010. However, it is important to note that this European average masks a much more complex reality and a very uneven European geography of tertiary education attainment.

First, and crucially, it is important to note that some regions of Europe are outperforming or performing just as well as the United States (US) and Japan. As shown in Map 15, in 2010, 86 NUTS2 regions (out of 311 for which we have data, including regions from non-EU-member-states) had rates of tertiary education attainment among their population aged 30-34 above 40%, 17 had rates over 50%, and one region even scored over 60%; that was Inner London, ranking first in our top-ten league table above, with 66% of its 30 to 34 years olds having a tertiary education in 2010. This is no surprise considering that central London is Europe's leading financial hub, one of Europe's main centres for a range of related advanced producer services, the seat of the British government and the location of several major universities and their associated research centres and spin-out companies. So, not only London's position in the national, European and international division of labour attracts a very large number of highly-qualified young workers who have been trained at tertiary level in other parts of the countries, Europe or the world, but it

also produces a significant number of graduates through universities located there, in particular the various world-class colleges of the University of London (e.g. the London School of Economics, King's College London, University College London, Royal Holloway, Queen Mary). The rest of our top-ten table is constituted of the following: a number of Scandinavian regions (the Danish capital region of Hovedstaden around Copenhagen with 58.6%, the Norwegian capital region of Oslo og Akershus with 57.6% and the neighbouring region of Trøndelag with 55.4%, and the region of the Swedish capital Stockholm with 53.2%), three regions in the Benelux area (the neighbouring provinces of Vlaams-Brabant and Brabant Wallon, respectively with 55.9% and 54.8%, alongside the Dutch region of Utrecht with 52.6%), the French capital region of the Île de France around Paris (52.6%), and the País Vasco region in northern Spain (ranking second right behind Inner London with 59.9%). All of these regions are located in Western Europe.

In our analysis, a further 7 regions – all of which are in the western part of Europe again – emerged with very higher rates of tertiary education attainment among the 30-34 age group of 50% or more in 2010. These are: Berkshire, Buckinghamshire and Oxfordshire (51.6%), the Highlands and Islands region of Scotland (51.5%), North Eastern Scotland (50.7%), all in the UK; two more Spanish regions, namely the capital region of the Comunidad de Madrid (51.3%), and the Comunidad Foral de Navarra (50.3%), bordering the País Vasco region; the Southern and Eastern NUTS2 region of Ireland (51.2%); and the Swiss region of Zurich (50.8%). One spatial pattern that clearly emerges is the importance of large metropolitan areas, especially capital cities and regional capital, and university centres. These regions possess an edge or a competitive advantage over other regions in terms of the proportion of their 30-34-year-old population with tertiary education for various reasons. On the one hand, university centres are obviously where people are trained at tertiary level, and, granted that they offer employment opportunities for qualified workers, one can imagine that a number of university graduates stay in the region after finishing their studies for professional and/or personal reasons. Looking at our 17 top cities here, one can imagine that this could be the case in the País Vasco region of Spain and in a number of Scottish regions. On the other hand, large metropolitan areas – which are also in many instances the location of universities – typically are the largest providers of skilled jobs, which attract younger workers qualified at tertiary level. Capital cities' regions – e.g. London, Copenhagen, Oslo, Stockholm, Brussels, Paris, Madrid, and Dublin in our top 17 cities – benefit from another edge over other regions: they offer, among other opportunities for highly qualified workers, a large number of jobs related

to government activities. These urban regions attract and/or retain a large number of young qualified workers regardless of whether the latter were trained there or not. Therefore it is important to keep in mind that a region with a high rate of people aged 30-34 with a tertiary education as represented on Map 15 does not necessarily means that this region is a top provider of tertiary education or a leader in terms of higher education; for some of those regions it would be more a case of providing job opportunities for people trained at tertiary level, opportunities that 30 to 34 years olds might not be able to find in the region where they received their tertiary education. In other cases, some regions clearly benefit from a mix of comparative advantages, including the fact that they encompass one or more large metropolitan areas with job opportunities for university-trained workers – in particular in various sectors of the knowledge economy (e.g. in the financial and related sector in London, the information and telecommunication technologies/ICT sector in Scandinavian cities) –, including a capital city, and several universities. That would be the case, for example, of the Comunidad de Madrid in Spain, the Île de France region in France, Inner London in the UK, but also the Southern and Eastern region of Ireland where the three largest cities of Ireland – Dublin the capital, as well as Cork and Limerick – are located, alongside the majority of Ireland's higher education institutions, both universities and institutes of technology. These combinations of factors are highly important in promoting innovation and developing the smart growth potential of particular regions (FOCI, 2010) particularly given that universities have been identified as central to improving the quality, and thus the attractiveness, of the local labour market (KIT,2011).

The above regions sharply contrast with the rates listed in our bottom-ten table, primarily outermost and peripheral rural regions. 8 regions are located in Turkey (Kastamonu, Balikesir, Mardin, Agri, Hatay, Gaziantep, Van, and Malatya, with rates of 8.1% to 12%), one in Portugal (Região Autónoma dos Açores, with 11.3%), and one in the Czech Republic (Severozápad, with 8.4%). These are mostly peripheral rural regions reliant on agricultural activity (e.g. the regions of Mardin, Agri, Gaziantep, Van, Hatay, Kastamonu in the northern, southern and eastern periphery of Turkey, and the region of Malatya in the interior of Turkey) or tourism (e.g. the Portuguese archipelago of the Azores in the middle of the North Atlantic Ocean, the western coastal province of Balikesir in Turkey, famous for its thermal spas and beaches, and the Severozápad region in the Czech Republic, part of the historical region of Bohemia and also famous for its spas). Given the heavy reliance on agricultural production and tourism that do not require a workforce with higher education training for the most part, the low rates of tertiary level education are not

surprising. When we look at other regions that fall below the 20% threshold in terms of the proportion of their population that has a tertiary education, the spatial pattern is striking: the 71 regions in this category (including the bottom ten discussed above) are located in the eastern half of Europe, including the southern part of the Baltic Sea Region, the eastern part of the Mediterranean Basin, the Danube Space and South East Europe – most of them are indeed located in the Danube space and South East Europe. The exceptions are three regions, all located in Portugal, where agricultural activities and tourism represent a major part of the economy. Again, the importance of agriculture, traditional industries and tourism in many of those regions – reinforced by the legacy of a Soviet economy based on heavy manufacturing in particular until two decades ago in large parts of the southern Baltic Sea Region and the Danube Space – appears a key element of understanding lower rates of tertiary education attainment.

Overall, three general spatial patterns emerge:

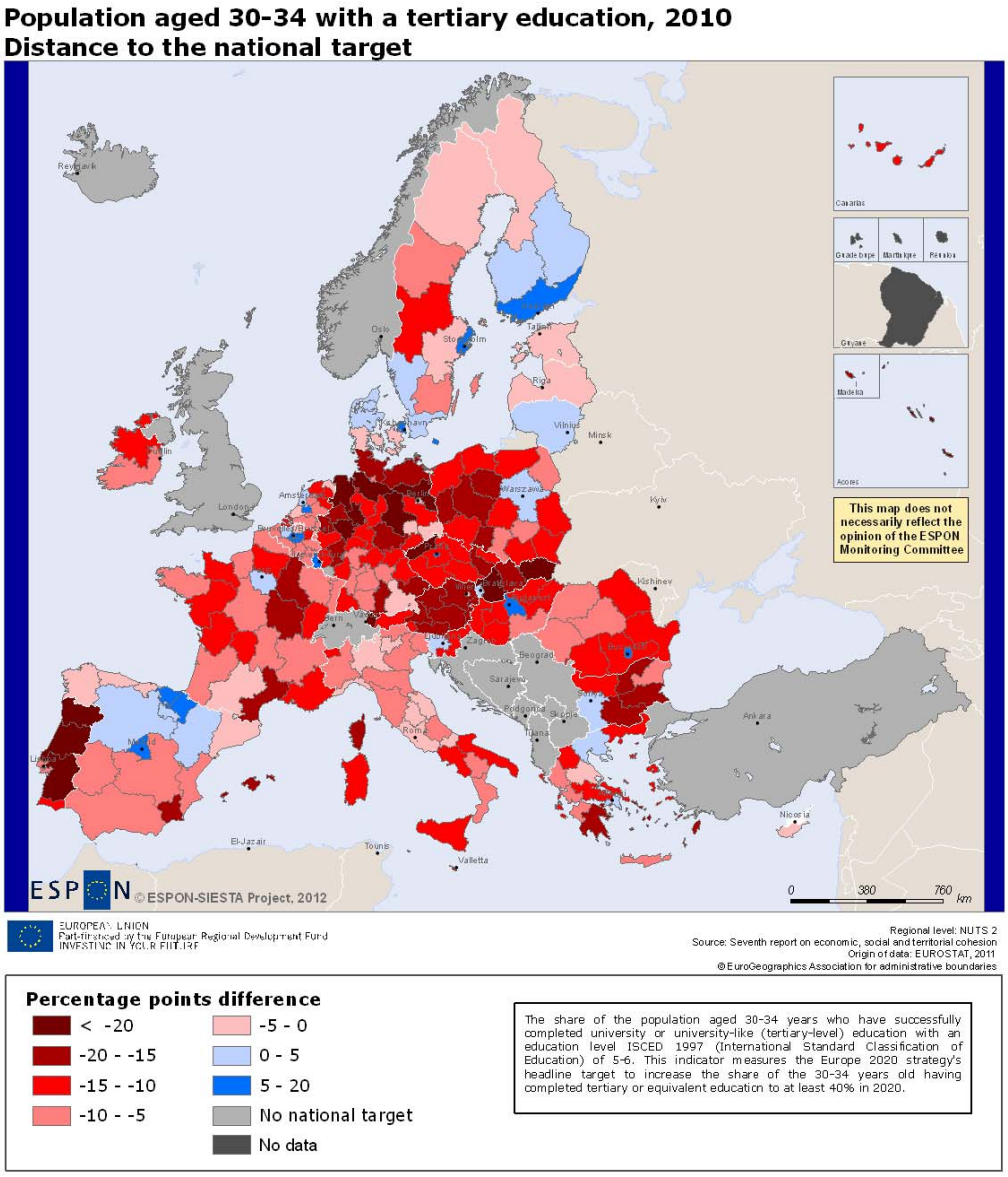
- There is a clear general divide between the western half of Europe (including Scandinavia) where rates of tertiary education attainment in the 30-to-34 years old group are generally close to the European Union average (33.6% in 2010) or above, and, on the other hand, the eastern part of Europe (including south-eastern Europe) where rates are for the most part lower. There are a few outliers in both categories. For example, most of Portugal, a couple of south-eastern Spanish regions, and some regions in the eastern part of England in the UK, are all below 30%, whereas in Estonia, Latvia and Lithuania the proportion of30-34 year olds with tertiary attainment is much closer to the European averages and western European rates.

- Another 'divide' that is to be noted is an overall urban-rural divide in the geographical distribution of younger people (30 to 34 years old) qualified at tertiary level. As highlighted earlier, regions with large metropolitan areas – capital cities in particular – tend to have much higher proportions with a tertiary education; this is especially true in the western and northern parts of Europe. As explained, this is due to both the concentration of higher education institutions in these regions and/or the job opportunities that they offer to qualified workers, in particular younger skilled workers.

- A third cluster of high performance on this indicator is comprised of regions that are the leaders of Europe's knowledge economy and the drivers of Europe's smart growth, where economies are largely based on advanced producer services and high tech industrial production in general, offering professional opportunities to 30-34

years olds with higher education. Other regions do not offer these opportunities for different reasons, some of which were mentioned earlier, such as the dominance of labour-intensive activities that do not require tertiary level training. Other regions that have good capacities in terms of providing higher education training may not always offer jobs to their graduates. This type of interregional 'brain drain' is due to a mismatch between the offer in terms of higher education training and local and regional labour markets. Another reason for lower rates of people aged 30-34 with a tertiary education in some regions that was not discussed in our analysis but that could be an explanatory element to consider in some cases is the fact that some regions have much older populations than others. Some European regions even attract an increasing number of older people while 'letting go' a lot of younger ones, in particular popular 'retirement spots' where older people return or move to once they retire. That would be the case of a number of regions in the eastern and southern parts of England for example.

3.4 % of 30-34 year olds related to national targets



Map 16: Distance to national targets of population aged 30-34 with tertiary education, 2010

Table 6.1 Regions with shortest distance to national targets in relation to % of 30-34 year olds with tertiary education

Member State	*Region*	*% ahead of target*
Denmark	Hovedstaden	18.3
Spain	País Vasco	15.9
Romania	Bucureşti - Ilfov	13.1
Belgium	Prov. Vlaams-Brabant	8.9
Czech Republic	Praha	8.9
Sweden	Stockholm	8.2
Belgium	Prov. Brabant Wallon	7.8
Netherlands	Utrecht	7.6
Spain	Comunidad de Madrid	7.3
Hungary	Közép-Magyarország	6.6

Table 6.2 Regions with furthest distance to national targets in relation to % of 30-34 year olds with tertiary education

State	*Region*	*% below target*
Germany	Detmold	-21.9
Slovakia	Východné Slovensko	-22.1
Germany	Arnsberg	-22.7
Germany	Sachsen-Anhalt	-22.7
Spain	Ciudad Autónoma de Melilla	-22.8
Portugal	Alentejo	-23.1
Slovakia	Západné Slovensko	-23.1
Czech Republic	Severozápad	-23.6
Germany	Brandenburg - Nordost	-23.8
Portugal	Região Autónoma dos Açores	-28.7

Table 6.3 Regions closest to median distance to national targets in relation to % of 30-34 year olds with tertiary education

State	*Region*	*% below target*
Romania	Vest	-9.6
Greece	Kriti	-9.7
Germany	Mittelfranken	-9.8
Spain	Andalucía	-9.8
France	Haute-Normandie	-9.9
Romania	Nord-Vest	-9.9
Hungary	Észak-Alföld	-10.0
Poland	Pomorskie	-10.1
Germany	Gießen	-10.2
Italy	Sardegna	-10.2

The overall target set by the Europe 2020 Strategy in 2008 in terms of tertiary education attainment among the 30-to-34-years-old age group is 40%. By 2010, 86 regions had reached the 40% target, compared to 57 in 2008. However, in addition to this overall EU target, most European countries have set their own national targets for 2020 in their National Reform Programmes (EU, 2011a), except for non-EU-member-states for which we do have data on tertiary education attainment such as Iceland, Turkey, Macedonia (all candidate countries), Croatia (which is set to become the EU's 28th member-state on July 1st, 2013), Switzerland and Norway, as well as one EU member-state: the United Kingdom (which had a national attainment rate of 43% in 2010, i.e. above the EU headline target of 40%). The absence of a national target in the UK could reflect recognition of very important disparities, for different reasons, between British regions that would render a single target at national level problematic or even meaningless for some. In general terms, Map 16 illustrates the distance that each European region has to go to reach national targets based on data from 2010, but the discussion is limited only to those regions/countries that have set national targets. Across Europe, national targets dramatically vary and are not necessarily anywhere close to the EU target, ranging from 60% in Ireland to 26.7% in Romania.

Within the countries that do have national targets, 34 NUTS2 regions have already reached or exceeded their target. Among the remaining 195

regions for which we have data and that have not reached their national targets yet, 29 are close to it, i.e. less than 5 percentage points from it. Table 6.1 illustrates that the top achievers in terms of distance to national targets are spatially dispersed: they are scattered across most macro-regions of Europe, from the north to the south, from the west to the east. However, most of them are capital city regions or regions bordering capital cities. These include: the Danish capital region of Hovedstaden (18.6 percentage points above the national target of 40% with a rate of 58.6% in 2010), the Romanian capital region of Bucureşti - Ilfov (13.1 percentage points above the national target of 26.7% with a rate of 39.8%), the Czech capital region of Praha (8.9 percentage points above the national target of 32% with a rate of 40.9%), the Swedish capital region of Stockholm (8.2 percentage points above the national target of 45% with a rate of 53.2%), the Spanish capital region of the Comunidad Autónoma de Madrid (7.3 percentage points above the national target of 44% with a rate of 51.3%), the Hungarian capital region of Közép-Magyarország (6.6 percentage points above the national target of 30.3% with a rate of 36.9%), alongside the Belgian provinces of Vlaams-Brabant and Brabant Wallon, bordering the Belgian capital region of Brussels (respectively 8.9 and 7.8 percentage points above the national target of 47% with rates of 55.9% for the former and 54.8% for the latter) and the region of Utrecht south of the Dutch capital region of (7.6 percentage points above the national target of 45% with a rate of 52.6%). Completing this top-ten is the Spanish region of the País Vasco, strikingly at 15.9 percentage points above the higher-than-average national target of 44%. Among the other 24 regions that had already reached or exceeded their national target by 2010, a significant number are also capital city regions or large metropolitan areas, which indicates that urban regions, in particular large ones or the ones that encompass national or regional capitals, tend to have an advantage in terms of meeting targets – European and national – of tertiary education attainment among this age cohort.

At the other end of our ranking are several regions that are rather far from reaching their national targets. Among the 'bottom ten', four are located in Germany (Detmold, Arnsberg, Sachsen-Anhalt, and Brandenburg – Nordost, respectively at 21.9, 22.7, 22.7, and 23.8 percentage points below Germany's national target of 42%); three are located in the Iberian Peninsula (the Spanish overseas territory of the Ciudad Autónoma de Melilla at 22.8 percentage points below Spain's national target of 44%, the Portuguese region of Alentejo at 23.1 percentage points below Portugal's national target of 40%, and the Portuguese archipelago of the Região Autónoma dos Açores at the very

end of our ranking, 28.7 percentage points away from reaching the national target of 40%); and three are located in former Czechoslovakia (the Slovakian regions of Východné Slovensko and Západné Slovensko, respectively and percentage points away from reaching their national target of 40%, and the Czech region of Severozápad at 23.6 percentage points below the Czech national target of 32%). Many of those at the bottom end of our ranking, i.e. the furthest away from reaching their national target, are rural regions (e.g. Severozápad in the Czech Republic, Alentejo in Portugal) dominated by agricultural activities and/or tourism. Others tend to be old industrial regions where traditional manufacturing has declined a lot since the beginning of deindustrialisation in Europe in the late 1970s (e.g. Detmold and Arnsberg, where some of the coalfields and steel plants of the Ruhr region in Germany were located). Finally, some of those regions are very small, scarcely populated regions located at the extreme periphery of Europe (e.g. the Azores Archipelago, the autonomous city of Melilla on the coast of Morocco).

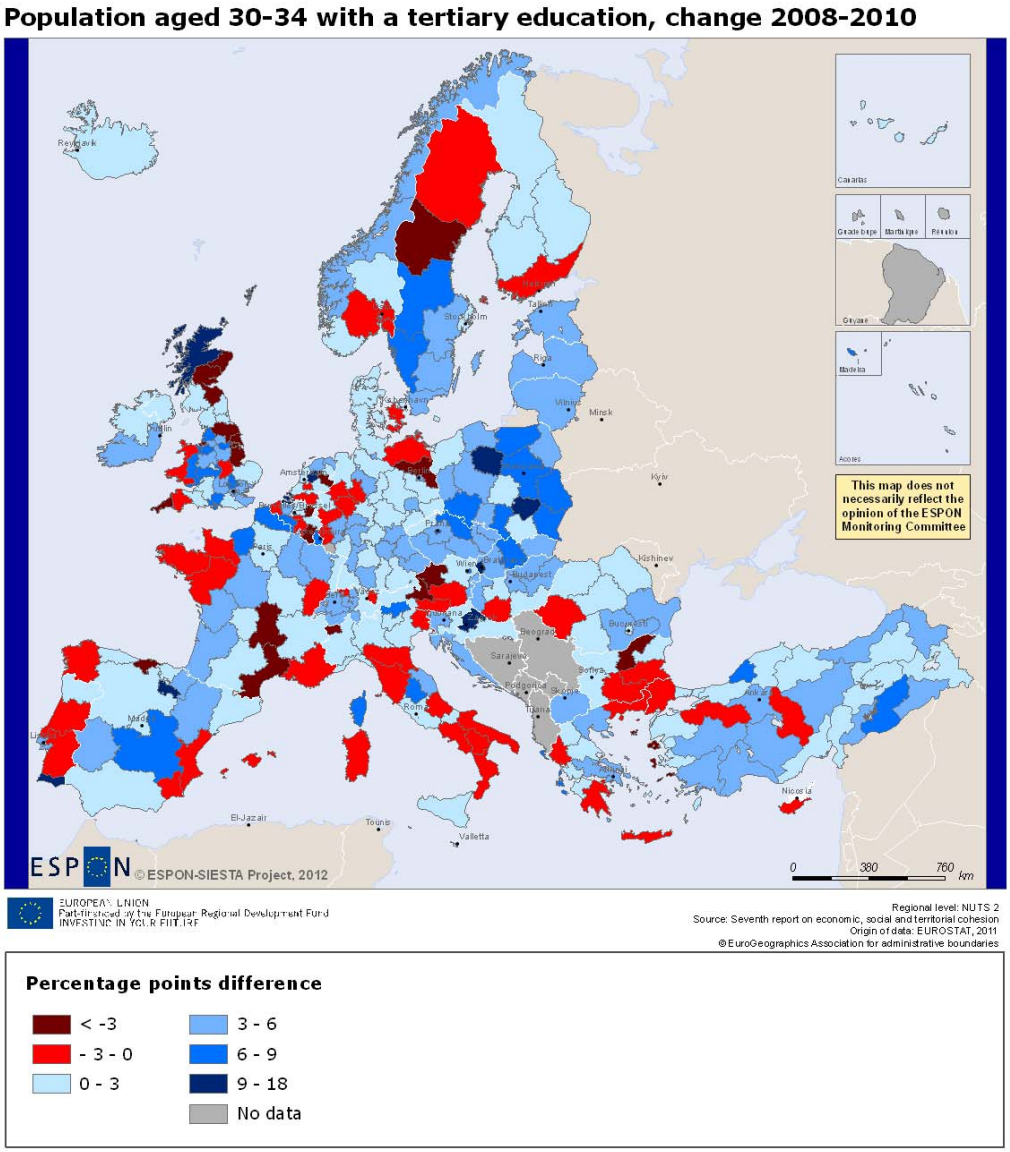
Some key issues arise from Map 16:

- The wide range of national targets could lead to some misinterpretation of the data, possibly leading the reader into thinking that some regions are doing much better than they are in terms of the proportion of their 30-to-34-year-old population having a tertiary education. For example, two of the top regions in terms of the distance to national targets indicator are the capital region of Bucharest in Romania (Bucureşti – Ilfov) and the capital region of Prague in the Czech Republic (Praha). Both present rates of tertiary education attainment in the 30-34 age groups that are close or above the European target of 40%, so they are obviously doing well by European standards. However, their presence in the top-ten might suggest, at first sight at least, that these regions are doing much better than most European regions in absolute terms, which is not the case. In fact, in absolute terms, the Praha region (40.9%) is performing better than the Bucuresti – Ilfov region (39.8%), and there are 86 regions that have rates higher than the latter, while 78 regions that are doing better than the former. There are, of course, valid reasons for setting up different national targets, taking into account a range of variables such as, for example, their point of departure in terms of tertiary education attainment, the path-dependent development of tertiary education in different countries, and the diverse needs for tertiary education in terms of meeting the needs of particular national labour markets. However, this is not to say that national targets are entirely satisfactory indicators as how, and by whom, they are defined is a very political issue.

- Another issue with respect to the definition of national targets is that they do not reflect the disparities that may exist within a country or within particular national space economies, in the same way that the overall 40% headline target at the EU-level does not reflect the spatial unevenness that characterises the European Union in terms of the proportion of people who have a tertiary education across the 27 member-states. For example, Germany has a national target of 42%, i.e. slightly higher than the EU headline target. None of its NUTS2 regions had reached this target by 2010, but some of them were close to it, i.e. less than 5 percentage points below it (e.g. Dresden with 41.6%, Berlin with 40.6%, or Leipzig with 38.3%). At the same time, 4 out of 10 of our bottom-ten regions, with respect to this particular indicator, were German regions. What this indicates is that the geography of tertiary education attainment among the early-thirties age group is extremely uneven in Germany, and this could be exacerbated by the ability of regions to not only train people at tertiary level but also to attract holders of higher-education degrees. The definition of regional targets, instead of or to complement national targets, may be something that could be considered.

- Finally, how likely countries are to reach both European and national targets is highly dependent on – both enabled and constrained by – particular geo-historical and, crucially, legal and institutional contexts which vary a lot. For instance, the existence of fees for access to higher education must be taken into account. While some countries offer free or quasi-free tertiary education (e.g. France), some require students to pay rather high fees (e.g. the UK). This will necessarily impact the ability of different countries and their regions to increase the proportion of their population with a tertiary education and to reach both European and national targets. Moreover, this is quite a time-sensitive issue, given that legal and institutional frameworks can change over time, following shifts in political leadership but also the general state of the economy – for example the financial and economic crisis that has been unfolding across Europe since late 2008, after national targets were established. This is what might lead Ireland, for example, to reintroduce university fees in the near future, casting doubt on the country's ability to meet its very high 60% headline target.

3.5 Change in % of 30-34 year olds with tertiary education, 2008-2010



Map 17: Population aged 30-34 with a tertiary education, 2008-2010

Table 7.1 Regions with greatest positive change, 2008-2010

Member state	*Region*	*% change*
United Kingdom	Highlands and Islands	17.7
Netherlands	Flevoland	15.0
Slovakia	Bratislavský kraj	12.3
Spain	La Rioja	12.0
Poland	Kujawsko-Pomorskie	10.9
Poland	Świętokrzyskie	10.2
Netherlands	Zeeland	10.1
Croatia	Northwest Croatia	9.2
Portugal	Algarve	9.1
United Kingdom	Inner London	8.9

Table 7.2 Regions with greatest negative change, 2008-2010

Member state	*Region*	*% change*
United Kingdom	Merseyside	-5.0
Sweden	Mellersta Norrland	-5.6
Netherlands	Overijssel	-5.9
Belgium	Severen tsentralen	-6.0
United Kingdom	Lincolnshire	-6.0
United Kingdom	East Yorkshire and Northern Lincolnshire	-7.5
France	Languedoc-Roussillon	-7.8
Spain	Ciudad Autónoma de Ceuta	-8.6
Spain	Ciudad Autónoma de Melilla	-9.2
United Kingdom	North Yorkshire	-10.6

Table 7.3 Regions closest to median change, 2008-2010

Member state	*Region*	*% change*
Netherlands	Noord-Holland	2.3
Germany	Lüneburg	2.3
Denmark	Midtjylland	2.3
France	Midi-Pyrénées	2.3
Belgium	Prov. Antwerpen	2.2
Switzerland	Eastern Switzerland	2.2
Spain	Castilla y León	2.2
France	Picardie	2.2
Greece	Notio Aigaio	2.2
Turkey	Izmir	2.2

Identifying trends in tertiary education attainment among the 30-to-34-year-old age group over time is a useful way of assessing the progress of European regions towards the European headline target of 40% and to their respective national targets; this is illustrated in Map 17 and the associated tables. Overall, the percentage of people with a tertiary education in Europe has been increasing since 2008, in the European Union as a whole (EU27) – from 31.1% in 2008 to 33.6% in 2010 –, in the vast majority of countries across Europe, and at the level of individual NUTS2 regions (236 out of 311 regions for which we have data have remained at the same level or increased their rates. While some regions started at much lower levels than others, regions that already had high rates of participation in 2008 may find it difficult to increase their proportion of younger workers with a tertiary education. Therefore the former group might still be far from reaching European and national targets but show an encouraging trend, while the latter are not necessarily performing poorly but might be stabilising at a level that is already high, and in some cases higher than the average.

The ten regions that have experienced the biggest increase between 2008 and 2010 in their share of population aged 30-34 with a tertiary education are scattered across Europe. At the very top of our top-ten table is the Highlands and Islands region of Scotland in the UK, with a 17.7 percentage point increase from 33.8% in 2008 to 51.5% in 2010. Another British region closes out the top-ten ranking: Inner London, a region that was already at 57.1% in 2008 and reached 66% by 2010, an increase

that hints at the growing attractiveness of the British capital and its jobs in financial and related services for highly-qualified workers in their early thirties, despite the financial and economic crisis. Two Dutch regions feature in this top-ten table – Flevoland (+15 percentage points from 23.7% to 38.7%) and Zeeland (+10.1 percentage points from 24.7% to 34.8%) – alongside two Polish regions – Kujawsko-Pomorskie (+10.9 percentage points from 18.4% to 29.3%) and Świętokrzyskie (+10.2 percentage points from 26.5% to 36.7%) –, two regions from the Iberian Peninsula – La Rioja in Spain (+12 percentage points from 36% to 48%) and the Algarve region in Portugal (+9.1 percentage points from 16.4% to 25.5%) –, the Slovak capital region of Bratislavský kraj (+12.3 percentage points from 29.5% to 41.8%) and the Croatian capital region of Northwest Croatia (+9.2 percentage points from 21% to 30.2%). No particular geographical pattern clearly emerges from this ranking table: some of these regions are very central from a European perspective (e.g. Inner London, the two Dutch regions), some are quite peripheral (e.g. the Highlands and Islands of Scotland, the Algarve in southern Portugal); some encompass large metropolitan areas (e.g. Inner London in the UK, the Zagreb region in Croatia, the Bratislava region in Slovakia), while others are relatively rural regions (e.g. the Highlands and Islands, the Algarve, the Zeeland region of The Netherlands). In addition to these top-ten regions that increased the share of population aged 30-34 with a tertiary education, a further 31 regions experienced a significant increase of 6 percentage point or more, as displayed on Map 17. Scanning through these regions does not allow us to identify a clear geographical pattern either.

On the other hand, when we look at the ten regions that have experienced the greater decrease in their young population qualified at tertiary level, we can identify a very broad spatial pattern in the sense that most of these regions are located in the western half of Europe, except for Severen Tsentralen in Bulgaria (-6 percentage points, from 26.9% in 2008 to 20.9% in 2010). Here again we find several British regions: Merseyside (-5 percentage points from 37.9% to 32.9%), Lincolnshire (-6 percentage points from 34.4% to 28.4%), East Yorkshire and Northern Lincolnshire (-7.5 percentage points from 33.2% to 25.7%), and North Yorkshire (-10.6 percentage points from 48.5% to 3.9%) all located in the north of England. Given that other British regions also made up our top-ten table – with the overall rate for the UK having increased from 39.7% in 2008 to 43% in 2010 –, we can clearly identify a polarisation of UK regions in terms of the spatial distribution of younger people (30 to 34 years old) qualified at tertiary level. A similar polarisation in the UK was illustrated in Maps 2-4 showing % GDP

investment in R&D in the *Smart Growth: Research and Innovation* thematic report suggesting that these regions may be failing to retain graduates, even if they train them, as there is a lack of employment opportunities in knowledge-based activities. Table 7.2 above also illustrates that the other regions with the greatest negative change in terms of tertiary education attainment among the 30-34 age group are almost all located in countries where, as in the UK, overall levels of tertiary education attainment are in general quite high (i.e. higher than the EU2020S headline target of 40%) and on the rise, namely: Sweden (42% in 2008; 45.8% in 210), The Netherlands (40.2% in 2008, 41.4% in 2010), France (41.2% in 2008, 43.5% in 2010), and Spain (39.8% in 2008, 40.6% in 2010). The Swedish region appearing in the bottom-ten (Mellersta Norrland) table is located in one of the most remote parts of the country. The two Spanish regions in that table are the autonomous overseas city-regions of Ceuta and Melilla, two tax havens located on the northern shores of Morocco, which have both particularly suffered from the financial crisis that has been unfolding since 2008. As far as the French region of Languedoc-Roussillon is concerned, despite the presence of major university centres such as Montpellier which has one of the highest overall levels of tertiary education attainment among Urban Audit cities (see our discussion of Map 19), it is also a region that heavily relies on tourism and agriculture (including wine production) and is a favoured retirement region for French retirees and retirees from other European countries including the UK and Ireland, attracted by the Mediterranean climate and opportunities to purchase houses in the countryside at much lower prices than in their home countries.

This leads us to a thorny question: do all regions need to increase their share of population aged 30-34 with a tertiary education? What if there are limited job opportunities for highly qualified workers in regions that train an increasing number of youth at tertiary level, such as perhaps part of the north of England where there are excellent universities but perhaps not sufficient appropriate employment to retain this population? Should those responsible for economic policy be considering development paths other than the knowledge-economy path if it is more appropriate? Tertiary level education produces highly qualified workers that are much needed in certain sectors of the economy but not necessarily in other sectors – or at least not in very large numbers – such as agriculture and tourism[1], but also craft and artisan production. These have proven to be a solid

[1] There may be some exceptions as, for example, the Spanish government has made attempts to improve the qualifications of those in the tourism sector through the establishment on Schools of Tourism in some universities.

economic base for the development of some European regions such as the so-called 'Third Italy' in the central and north-eastern parts of the country. It would be worth considering encouraging and supporting the kind of training that would benefit regions the most based on their economic profiles and strengths, be it at tertiary or other levels.

A number of important points should therefore be considered:

- First, as per our discussion of Map 16, some regions are in a much stronger position to increase their rates of tertiary level attainment and, therefore, to meet European and national targets. This would generally be the case in urban regions compared with more rural regions, for example. But this does not necessarily mean that the highest performing regions have increased their tertiary level training capacities or have improved the quality of their high-education systems as per some of the explicit recommendations contained in the Europe 2020 Strategy and other policy documents such as the Youth on the Move Communication or the Agenda for New Skills and Jobs Communication. It might just mean that they are increasingly able to attract and to retain highly-qualified 30-to-34-year-old people (possibly trained elsewhere) by offering job opportunities that correspond to their qualifications.

- Second, it is important to highlight again the issue of change expressed in percentage points (as in Map 17 and its associated tables) versus proportional change, which are not presented here but could illustrate rather different realities. For example, if we were to present the data on change in tertiary level education among the 30-34 age group between 2008 and 2010 proportionally rather than as percentage points, six Turkish regions would appear in the top-ten table (five of them at the very top), alongside a Dutch region, a Polish region, an Italian region and a Greek one. The reason for this very different ranking table is that some of those regions, in particular in Turkey, started with very low rates of tertiary attainment in 2008, and managed to double (and even tripled in one case) their rates by 2010. This potentially indicates that either these regions have considerably improved their tertiary education system or their ability to attract and/or retain highly-qualified youth. On the other hand, discussing proportional change rather than percentage points would lead to the production of a 'bottom-ten' table listing regions on The Netherlands, Austria, the UK, Germany, France, Bulgaria, and Spain, i.e. countries that have for the most part high levels of tertiary education attainment in the 30-34 age category but that have experienced decreases in their attainment rates of between -16.16% and -30.26%.

4. Population aged 25-64 with tertiary education, 2010

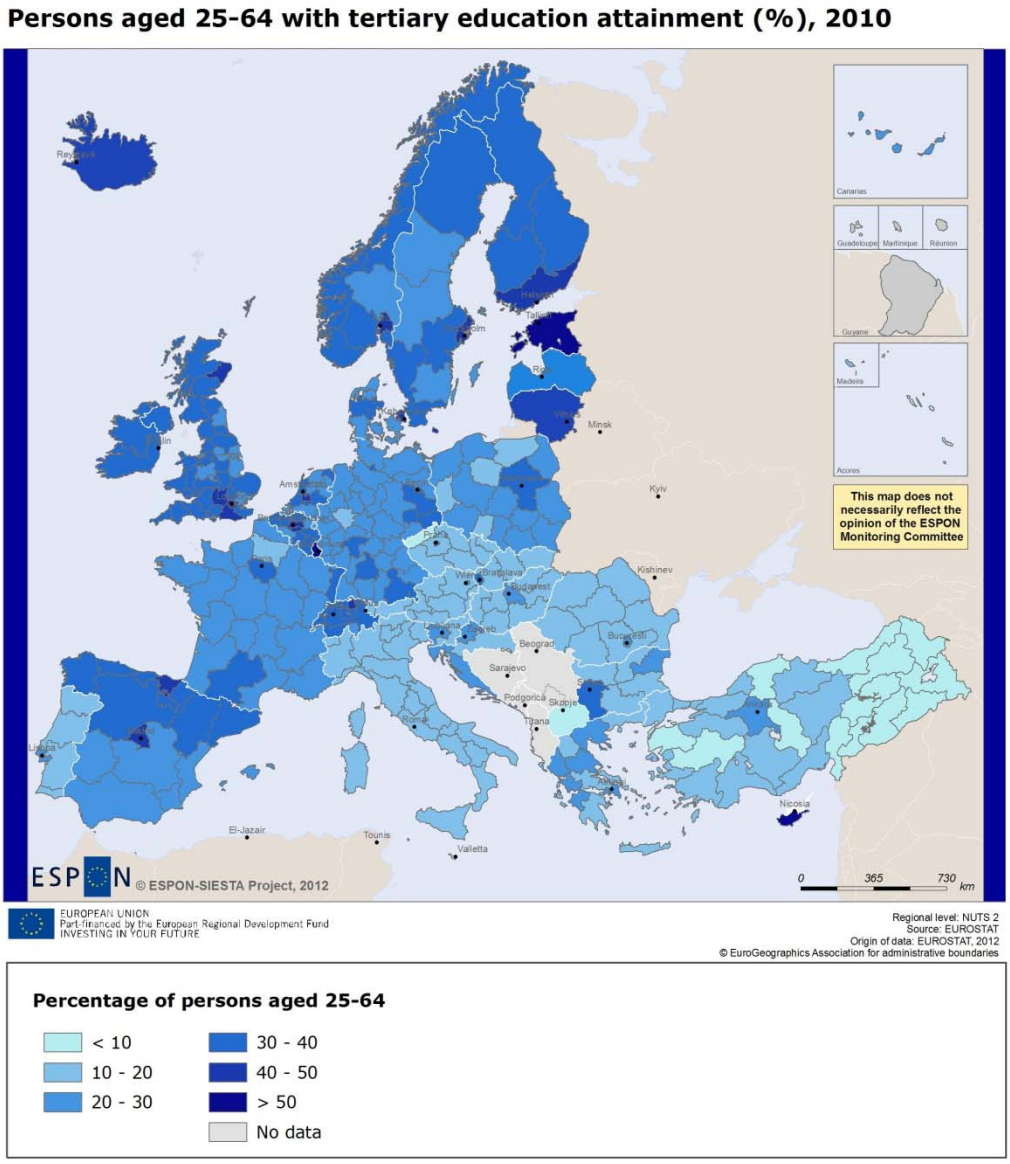
4.1 Meaning of indicator

While Maps 15, 16 and 17 present data on the proportion of 30-to-34-year-olds that had a tertiary education in 2010, Map 18 illustrates the European-wide distribution of people with tertiary education attainment among a much wider portion of the population aged 25 to 64. The data for 2010 is presented at NUTS2 level as a percentage of the total population aged 25 to 64.

4.2 Relevance

Van der Ploeg and Veugelres (2007, p. 65) suggest that "as secondary education was crucial to the post-war economy, so higher education has become essential for the development of the knowledge society, which demands increasing levels of supply of highly-educated, highly-skilled people". European Union authorities are fully aware of that and an increase in the number of people with tertiary level education in Europe is a key aspiration of the Europe 2020 Strategy and associated flagship initiatives – in particular Youth of the Move (EU, 2010b), Innovation Union (EU, 2010e) and the Agenda for New Skills and Jobs (EU, 2010f). Mapping tertiary education attainment across Europe provides us with a picture of where Europe's strengths and weaknesses are in terms of its most qualified labour force, potentially helping us develop recommendations for spatially targeted policies in terms of tertiary level education, lifelong learning and employment. Moreover, comparing the data presented on Maps 15, 16 and 17 – which focus solely on the early thirties age group – to the data from Map 18 – which encompasses most of the working age population – helps us assess whether particular regions are performing 'better' or 'worse' in terms of training, attracting or retaining people with a tertiary education among the younger generation (i.e. the 30-34 age group).

4.3 % of population aged 25-64 with tertiary education



Map 18: Percentage of 25-64 year olds with a tertiary education, 2010

Table 8.1 Regions with highest % of tertiary education attainment among people aged 25-64

State	*Region*	*% 25-64 year olds*
United Kingdom	Inner London	53.1
Belgium	Prov. Brabant Wallon	49.5
Norway	Oslo og Akershus	47.9
Belgium	Prov. Vlaams-Brabant	44.6
Denmark	Hovedstaden	44.1
Spain	País Vasco	44.1
United Kingdom	Berkshire, Buckinghamshire, Oxfordshire	43.5
Sweden	Stockholm	42.5
Belgium	Région de Bruxelles-Capitale	42.1
Netherlands	Utrecht	41.7

Table 8.2 Regions with lowest % of tertiary education attainment among people aged 25-64

State	*Region*	*% 25-64 year olds*
Turkey	Erzurum	9.4
Turkey	Trabzon	9.2
Czech Republic	Severozápad	9.0
Turkey	Manisa	8.8
Turkey	Sanliurfa	7.8
Turkey	Hatay	7.0
Turkey	Gaziantep	7.0
Turkey	Van	6.8
Turkey	Madrin	6.7
Turkey	Agri	6.4

Table 8.3 Regions closest to median % of tertiary education attainment among people aged 25-64

Member state	*Region*	*% 25-64 year olds*
Netherlands	Limburg	25.4
France	Languedoc-Roussillon	25.3
France	Centre	25.1
Germany	Sachsen-Anhalt	25.0
France	Basse-Normandie	24.8
France	Auvergne	24.8
Netherlands	Drenthe	24.6
Germany	Oberfranken	24.4
Germany	Schwaben	24.4
Germany	Trier	24.4

The proportion of people aged 25-64 in the European Union with tertiary level education in 2010 was 25.9% compared to 33.6% for the 30-34 age group. The percentage of the broader working-age population (i.e. the 25-64 age group) with a tertiary education increased from 24.3% to 25.9% (2008-2010) but this increase was less significant than among those in their thirties examined in the previous maps. Similar to the broad geographical divide between the western and eastern parts of Europe that we identify in our discussion of tertiary level education among the 30-34 age group (see our discussion of Maps 15, 16 and 17), most of the regions with the highest percentages of tertiary education attainment among their general population (30% or above) are located in the macro-regions of the western part of Europe (with the notable exception of Portugal where rates are low) and in the Baltic Sea Region, while most of the lowest percentages are found in the eastern part of Europe, in particular in the eastern part of the Mediterranean Basin, in the Danube Space and in South East Europe as illustrated on Map 18.

Table 8.1 above is strikingly similar to Table 5.1 (associated with Map 15) indicating that the highest performers in terms of tertiary level education among the younger generation are also the top performing regions in general in terms of training, attracting and/or retaining a highly qualified labour force regardless of its age. These regions are broadly located in Southeast England (Inner London with 53.1% and the Berkshire, Buckinghamshire, Oxfordshire region with 43.5%), in central Belgium (the

Région de Bruxelles-Capitale with 42.1%, alongside the neighboring provinces of Brabant Wallon with 49.5% and Vlaams-Brabant with 44.6%) and in the central part of the Netherlands (Utrecht with 41.7%), in three capital regions of Scandinavia (Oslo og Akershus with 47.9%, Stockholm with 42.5%, and Hovedstaden around Copenhagen with 44.1%), and in northern Spain (País Vasco with 44.1%). This list is almost exactly the same as the top-ten list established for Map 15, except for one region, namely Trøndelag, in Norway, which, with a rate of 37% of tertiary level attainment among the 25-64 age group, still ranks high (28th out of 312 NUTS2 regions for which we have data). The rate among the 30-34 age group for this region was 55.4%, suggesting that this region is performing much better among the younger generation. As explained in more detail in our discussion of Map 15, these top performing regions listed above benefit from a number of factors that give them an undeniable comparative advantage, including the presence of large metropolitan areas with a bigger number of job opportunities for highly qualified workers (e.g. in leading sectors of the knowledge economy such as high-tech, advanced producer services, etc), the presence of a large number of governmental and related administrative functions – for some at least, especially national or regional capitals – for which tertiary level education is required, and the presence of universities and their associated research centres and spin-out companies, which act as 'magnets' for private firms that are interested in being located close to these producers or incubators of highly trained talent. It is worth noting that all of these regions, however, have higher rates of people with a tertiary education in the 30-34 age group (ranging from 52.6% to 66%) than in the broader 25-64 age group (ranging from 41.7% to 53.1%), which indicates that they are performing better in the younger generation. This is not surprising given increased participation rates in tertiary level education over the last decade compared with for example the 1970s or 1980s, rather naturally affecting younger adults more than any other age category.

By the same token, several of the regions that had the lowest shares of population aged 30-34 with tertiary education in 2010 (see Map 15) appear as the poorest performing regions in terms of tertiary education attainment across the wider working age population. 90% of the regions in Table 8.2 are located in Turkey, with rates ranging from 6.4% in the region of Agri to 9.4% in the region of Erzurum (5 regions are listed in both Table 5.2 and Table 8.2, namely Hatay, Gaziantep, Van and Mardin). Turkey clearly suffers from a deficit in tertiary education attainment – overall and among its younger generation – compared to the rest of Europe. However, even the lowest performing Turkish regions are performing better with their younger generation (30 to 34 years-olds)

than in the wider 25-64 age bracket with respect to tertiary level attainment. For instance, in 2010 Agri only had 6.4% of its population aged 25-64 qualified at tertiary level but 10.2% of its population aged 30-34 had a tertiary degree. This is a very encouraging trend in terms of up-skilling the (younger) population in Turkish regions since there is an increasing share of the population in these regions that qualify for jobs that requires higher qualifications, in particular in various domains of the knowledge or smart economy. Although the general up-skilling of the population – in particular the younger generation – is positive, it is, however, important to reflect on whether or not employment opportunities for this increasing share of highly qualified workers exist in these regions, and in the sectors of the economy that correspond to the type of tertiary training acquired. In the case of Turkey, for example, the economy still relies heavily on agricultural activities and tourism. A situation in which the share of the population that is highly qualified keeps increasing when job opportunities for highly qualified workers do not increase or not at the same pace could exacerbate unemployment (especially among the younger, more qualified generation of workers) and/or encourage brain drain from particular regions that invested in training people at tertiary level without benefiting from this investment.

In addition to the 9 Turkish regions in Table 8.2 above, there is Severozápad (9%), a northwestern mountainous region of the Czech Republic – part of the historical region of Bohemia heavily reliant on tourism (its spas, in particular, are well-known). This region also appeared in the bottom-ten table associated with Map 15. In the case of Severozápad, the proportion of the 30 to 34 years old cohort with a tertiary education in 2010 (8.4%) is lower than that of the overall working age population aged 25 to 64 (9%). In effect this means that tertiary level attainment among people in their early thirties tends to be lower than for the overall population. This could be for two reasons that would require further research; either it potentially indicates a trend toward a deskilling of the younger population (30-34 year olds) or it indicates the presence of a very large, young, highly-trained population in the 25-30 age categories that more than counterbalances the effects of lower attainment in the higher age categories.

Some key issues to consider are:

- The European Union drive towards the development of a knowledge economy requiring high educational qualifications must be progressed within a framework that ensures certain age cohorts are not excluded from labour force participation because of their educational profile. Economic policy and the innovation agenda must

therefore be developed and implemented within a social framework that cross-cuts the territorial cohesion framework. Without this, smart growth objectives may jeopardise the inclusive and sustainable growth objectives of the EU 2020 strategy.

- It is clear that there is a generally lower level of higher educational attainment among older populations across Europe, particularly those from their late 30's to retirement age. This highlights the importance of life-long learning and retraining initiatives if all sectors of the population wish to fully participate in, and benefit from, the knowledge-economy. Educational institutions have a key role to play in improving the quality of the local labour market (FOCI, 2010) and our analysis suggests that there is an important job to be done by higher education institutions in facilitating flexible learning by non-traditional learners (i.e. those who are not recent school leavers).

5. Population aged 25-64 with tertiary education in Urban Audit cities, 2010

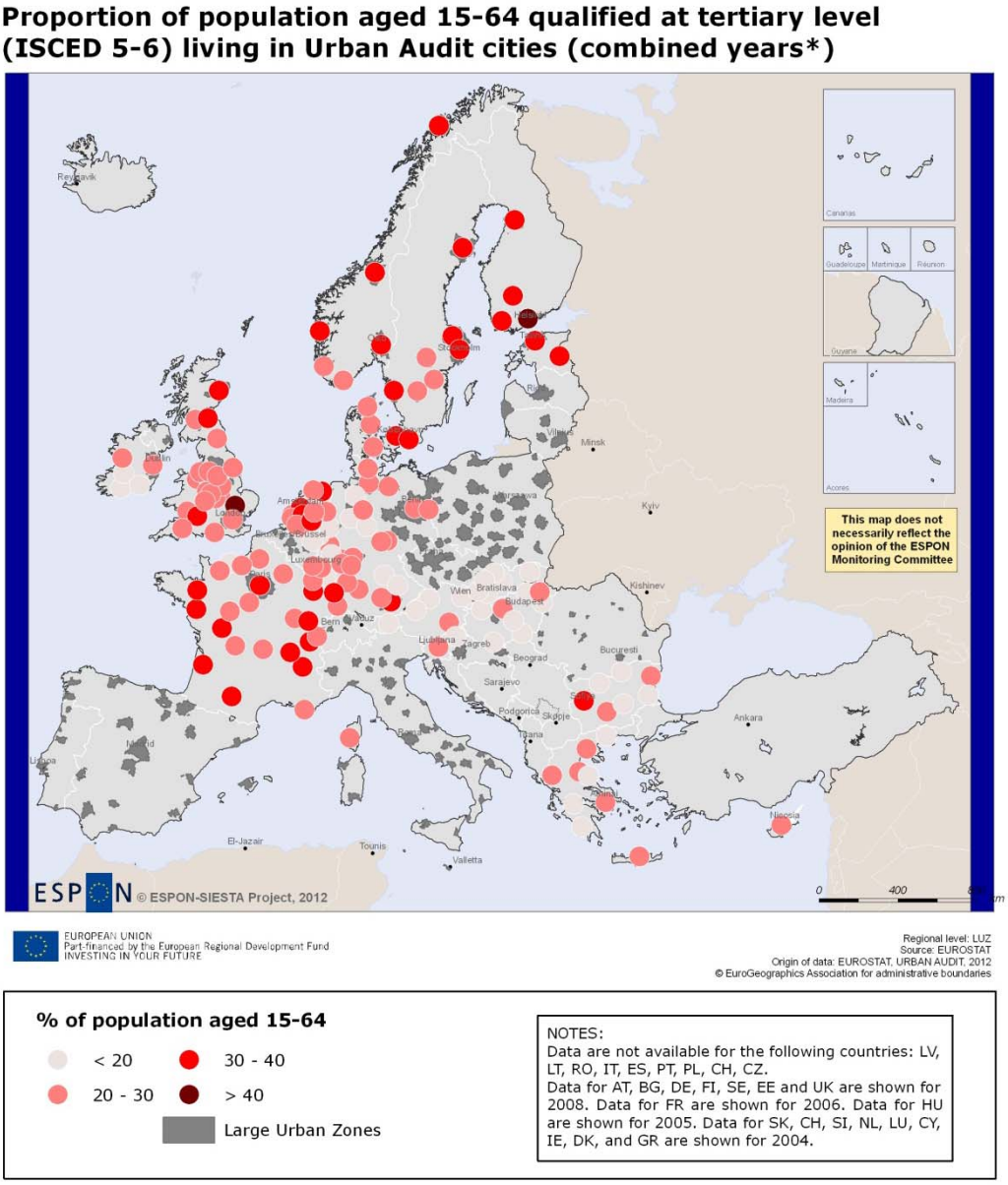
5.1 Meaning of indicator

Map 19 illustrates the proportion of population aged 15-64 qualified at tertiary level (ISCED-5 and ISCED-6) living in Urban Audit cities, as a percentage of the total population aged 15 to 64. The data illustrated is for combined years ranging from 2004 to 2008. Map 19 is meant to complement the data on tertiary education attainment provided by Map 18 at the regional level through its particular focus on Europe's Large Urban Zones as defined by Urban Audit. We must note, however, that the age group considered for Map 19 is 15-64, while the age group considered for Map 18 was 25-64.

5.2 Relevance

Although the data presented on Map 19 can be read as supplementary to the information provided by Maps 15-18, it is important to bear in mind a couple of key limitations of the data presented here. Data are not available for a significant number of countries, including: the Czech Republic, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Spain, Switzerland, and Turkey. In addition, the data presented on Map 19 are not for the same year across all countries and cities. The most recent data are from 2008 and cover Austria, Belgium, Germany, Finland, Sweden, Estonia and the United Kingdom (UK); the data for France are from 2006; and the data for Hungary are from 2005. The oldest data, for Slovakia, Switzerland, Slovenia, The Netherlands, Luxembourg, Cyprus, Ireland Denmark and Greece, are from 2004. Two problems arise here: first, there is quite an important gap – 4 years – between the oldest and most recent data, and, second, even the most recent data from 2008 are quite likely to be outdated especially in the light of the financial and economic crisis that has been unfolding in Europe and other parts of the world for the past four years. The macroeconomic changes triggered by this major crisis are likely to have had an impact on rates of completion of tertiary education in European regions and cities. While these issues seriously constrain the level of analysis contained in the discussion of Map 19, it is useful to examine how the headline indicator of 40% of 30-34 year olds with a tertiary education is playing out at the urban level.

5.3 % of population in Urban Audit cities with tertiary qualification



Map 19: Proportion of population aged 15-64 in Urban Audit cities with tertiary qualification

Table 9.1 Urban Audit cities with highest % of population aged 15-64 qualified at tertiary level

Member state	*City*	*% 15-64 year olds*
United Kingdom	Cambridge	46.5
Finland	Kernel Helsinki	43.7
Finland	Helsinki	42.3
Netherlands	Utrecht	38.4
Finland	Oulu	38.3
United Kingdom	Inner London	38.2
Finland	Tampere	37.9
France	Toulouse	37.4
France	Grenoble	37.3
France	Montpellier	36.8

Table 9.2 Urban Audit cities with lowest % of population aged 15-64 qualified at tertiary level

Member state	*City*	*% 15-64 year olds*
Netherlands	Heerlen	15.3
Germany	Saarbrücken	15.2
Hungary	Miskolc	14.3
Ireland	Waterford	13.4
Hungary	Kecskemét	13.4
Slovakia	Nitra	13.1
Slovakia	Zilina	12.7
Slovakia	PreSov	12.1
Slovakia	Trencín	12.1
Slovakia	Trnava	10.6

Table 9.3 Urban Audit cities closest to median % of population aged 15-64 qualified at tertiary level

Member state	*City*	*% 15-64 year olds*
Netherlands	Tilburg	25.2
Netherlands	Breda	25.1
Sweden	Örebro	24.9
United Kingdom	Portsmouth	24.8
Germany	Karlsruhe	24.6
Sweden	Jönköping	24.6
Germany	Wiesbaden	24.4
France	Metz	24.4
Luxembourg	Luxembourg	24.4
Netherlands	Arnhem	24.4

As discussed in our analysis of Maps 15, 16, 17, and 18, the top performing regions of Europe in terms of tertiary education attainment, in general and with respect to the 30-34 age group in particular, are for the most part metropolitan areas, and, in many cases, national or regional capitals. Through its focus on large urban areas, Map 19 helps us further identify which cities in Europe – at least in the countries for which we have data – have the highest shares of 15 to 64 years olds qualified at tertiary level.

At the top of the urban hierarchy represented by Map 19, and as listed in Table 9.1, are a mix of different types of cities including:

- Capital cities, for example: Helsinki in Finland – both its core with 43.7% of people aged 15-64 qualified at tertiary level, and its broader metropolitan area with 42.3%; and Inner London in the UK with 38.2%, which is also Europe's leading global financial centre or 'global city' (Sassen, 2001);

- Major university and research centres, for example: Cambridge in the UK, and its world-renowned university, with 46.5%; the Finish cities of Oulu with 38.6%, considered as one of Europe's 'living laboratory', and Tampere with 37.9%, with its high concentration of universities and polytechnics specialising in mechanical engineering, automation, information and communication technologies (ICTs), health sciences and biotechnologies; Montpellier in France with

36.8%, one of the oldest university towns in the world; and Utrecht with 38.4%, the location of the largest university in The Netherlands;

- High-tech growth poles, including: Cambridge, again, and its Silicon Fen area specialising in electronics, software engineering and biotechnologies; Grenoble with 37.3%, one of France's key clusters of start-up companies in ICTs and electronics and a European leader in terms of NBIC technologies (these emerging technologies are a key focus for European smart growth and innovation and are discussed in more detail in FOCI (2010) and KIT (2011) projects); and Toulouse, in France also, with 37.4%, the heart of Europe's aerospace and aircraft industries, led by the Airbus European consortium.

The other end of our ranking of Urban Audit cities for which we have data on tertiary level education among the working age population (aged 15-64), presented in Table 9.2, is dominated by European cities located in the macro-region of the Danube space. 5 out of the 10 'bottom' cities are located in Slovakia (Nitra, Zilina, PreSov, Trencín, and Trnava, with rates ranging from 10.6% to 13.1%), two are located in Hungary (Miskolc with 14.3% and Kecskemét with 13.4%), one in Germany (Saarbrücken with 15.2%). The other two regions in this table are located in The Netherlands (Heerlen with 15.3%) and Ireland (Waterford with 13.4%). This illustrates that there is not necessarily a correlation between early school leaving and tertiary attainment as Waterford appeared as a very good performer in ensuring completion of compulsory education. There is no university in Waterford and this has been a major political issue for a number of years, which might help explain its position here. Most of the cities in the bottom ranking are parts of old industrial basins dominated by coal-mining, steel and other metal production and heavy manufacturing; employment in these sectors of the economy – all in sharp decline in Europe – does not require, for the most part, higher education, which explains, to a great extent, the lower rates of population qualified at tertiary level in these cities. Although the rates for the bottom-ten cities represented on Map 19 tend to be higher than the rates for the bottom-ten cities represented on Map 18 (tertiary attainment levels at the regional scale), it would be difficult to make any general statement here with respect to the urban/rural divide that we discussed in previous analyses (of Maps 15 and 18 in particular) given that data at the urban scale are missing for a significant number of countries including Turkey, the Czech Republic and Portugal, which dominated the bottom-ten tables for Maps 15 and 18.

6. Population aged 15-24 not in work, education or training, 2010

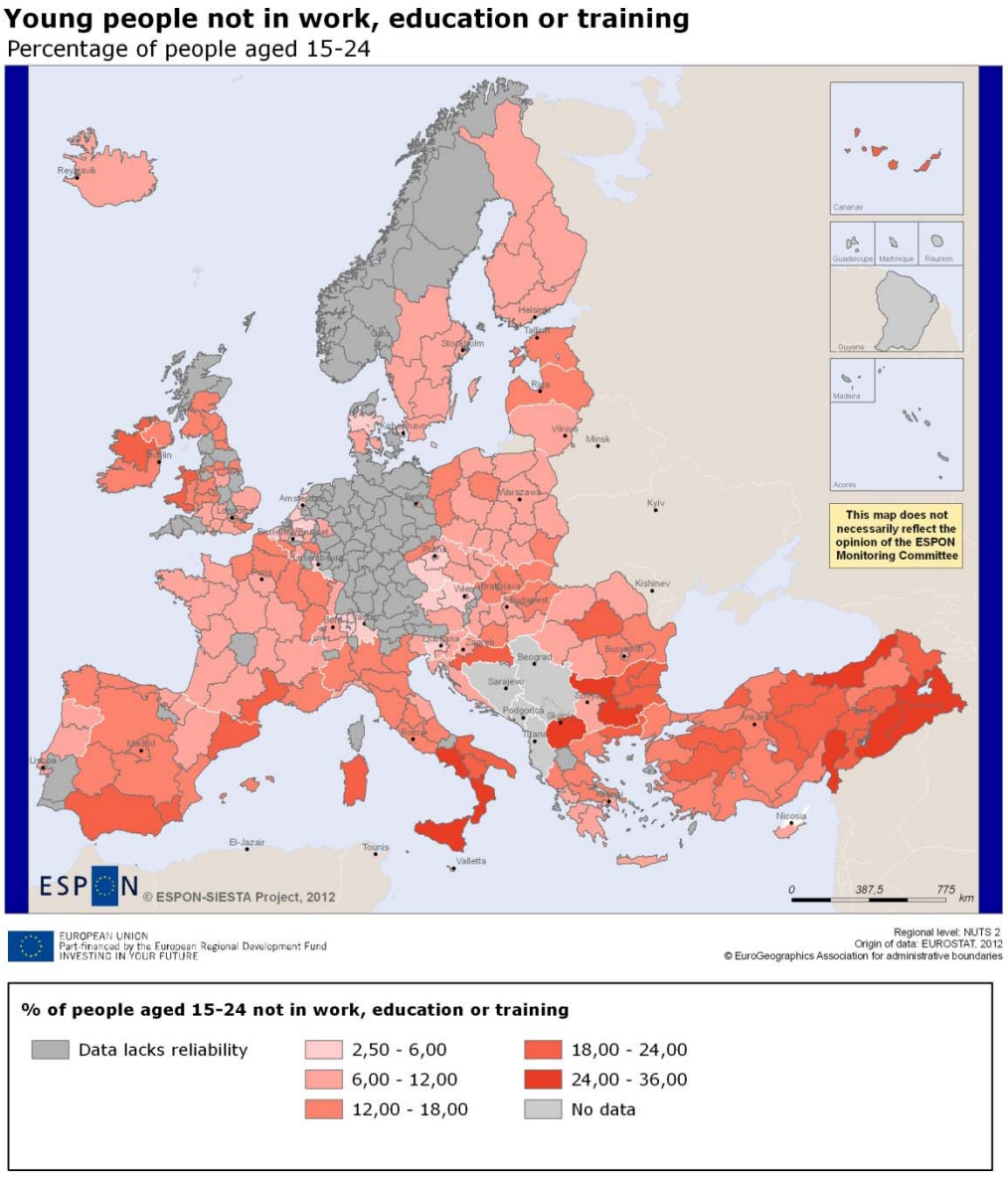
6.1 Meaning of indicator

Currently 15% of European 15-24 year olds are disengaged from both work and education (EU, 2010b) and are classified by the EU Labour Force Survey as not in work, education or training. Map 20 illustrates this phenomenon that has become widely referred to as NEET, presenting data at regional level on young NEET people – or 'NEETs' – in 2010, expressed as a percentage of the total population aged 15-24. While there are obvious patterns across Europe in relation to this indicator, EUROSTAT urge caution in using the data due to reliability considerations derived from the relatively small sample size in some cases.

6.2 Relevance

The 'Youth on the Move' flagship initiative aims to enhance the performance of education systems and facilitate the entry of young people to the labour market. Specifically, the initiative aims to unleash the potential of young people to achieve the EU2020 objectives (EU, 2010b). At the end of 2011, 16.7% of young people aged 15-24 in the European Union were classified as NEETs and this has major implications for the future supply of skilled labour. The current economic crisis has exacerbated the problem as research indicates that young people are the first to lose their jobs and the last to gain employment during a recession (Statistics New Zealand, 2011). This is due to many factors, such as missing opportunities to (re)train, lack of experience and skills, and weak labour-market information and services. Research also suggests that if someone has not worked by the age of 23, they will face long-term damage to their future wages and employment chances (Tomorrow's People, undated) and has long term effects on their well-being (Bell and Blanchflower, 2010). In order to meet objectives for smart, sustainable and inclusive growth and to satisfy future labour demands, there is an economic imperative to draw those categorized as NEETs back into the labour market and the flagship initiative seeks to do this through four main action points related to labour market training, mobility and activation.

6.3 % of 15-24 year olds classified as NEET's



Map 20: Young people not in employment, education or training, 2010

Table 10.1 Regions with the lowest proportion of 15-24 year olds classified as NEET's, 2010

Member state	*Region*	*% of 15-24 year olds*
Netherlands	Overijssel	3.3
Netherlands	Gelderland	3.5
Netherlands	Utrecht	3.8
Netherlands	Noord-Holland	4.0
Norway	Oslo og Akershus	4.3
Netherlands	Noord-Brabant	4.6
Czech Republic	Praha	4.7
Netherlands	Limburg (NL)	4.8
Switzerland	Ostschweiz	4.9
Denmark	Nordjylland	5.1

Table 10.2 Regions with the highest proportion of 15-24 year olds classified as NEET's, 2010

State	*Region*	*% of 15-24 year olds*
Turkey	Kırıkkale	33.2
Turkey	Manisa	33.3
Turkey	Malatya	34.4
Turkey	Kayseri	35.5
Turkey	Hatay	37.3
Turkey	Gaziantep	40.1
Turkey	Ağrı	45.2
Turkey	Mardin	46.7
Turkey	Şanlıurfa	49.8
Turkey	Van	51.6

Table 10.2 Regions closest to the median proportion of 15-24 year olds classified as NEET's, 2010

Member state	*Region*	*% of 15-24 year olds*
Spain	Aragón	12.4
France	Franche-Comté	12.4
Italy	Liguria	12.4
Poland	Dolnośląskie	12.4
United Kingdom	Essex	12.4
Italy	Provincia Autonoma Trento	12.7
Poland	Warmińsko-mazurskie	12.7
Portugal	Alentejo	12.7
Belgium	Prov. Luxembourg (B)	12.8
Belgium	Prov. Namur	12.8

The concept of NEET – 'not in education, employment or training' – was first introduced in the United Kingdom (UK) in 1999 (Social Exclusion Unit, 1999) and became subsequently widely used by the OECD and some national governments to describe economic inactivity among a particular age cohort. The most recent data from EUROSTAT for 2011 suggests that 16.7% of those in Europe aged 15 to 24 were classified as NEET. This varied from a low of 5% in the Netherlands to highs of 27.9% in Bulgaria and 36% in Turkey. Map 20 illustrates the variations across the European territory through an examination of data at a NUTS2 level where it is available.

In 2010, there were 9 regions (for which we have reliable data) that had less than 5% of NEETs and a total of 78 with less than 10%. These regions can be considered as high performers in terms of NEETs. Among the regions with the lowest rates of NEETs in Europe (Table 10.1) one cannot fail to notice the performance of The Netherlands: 6 of the country's 12 NUTS regions appear in the top-ten table, all with rates below 5%, with an impressive 3.3% for the central eastern region of Overjissel. Other regions in the top-ten are located in Norway (the capital region of Oslo og Akershus with 4.3%), the Czech Republic (the capital region of Praha with 4.7%), Switzerland (Ostschweiz with 4.9%) and Denmark (Nordjylland with 5.1%). The distribution of regions with lower rates of NEETs does

not appear to follow a particular geographical pattern other than the fact that, from a macro-regions standpoint, they are mostly located in the Baltic Sea Region, in the western part of the Danube Space and in North West Europe. That being said, a significant number of regions with higher rates of NEETs (i.e. higher than 10%) are also located in some of those macro-regions, especially in North West Europe. This is the case, for example, of north-eastern and south-eastern France and several regions in the northern part of England and Wales. What this tends to indicate is a significantly variegated geography of NEET populations within these countries, suggesting a polarisation of opportunities within a national context perhaps linked to the geography of R&D investment, knowledge-intensive activities and educational opportunity. This further indicates that regional rather than national policies and targets with respect to tackling the issue of NEETs may be most appropriate.

On the other hand, 52 regions out of the 264 for which we have reliable data have significantly high rates of NEETs: rates of 20% of NEETs or above basically means that a fifth or more of people aged 15 to 24 were not in education, employment, or training in 2010. 31 of those regions had rates of 25% or above, 14 had rates of 30% or above, and 5 had rates of 40% or above, all of them located in Turkey, with the Van region hosting a NEET rate of 51.6%. All of the regions in Table 8.2 are in Turkey, and several of these – namely Hatay, Gaziantep, Van and Mardin – also experienced among the lowest rates of tertiary education attainment, both at the level of the working population aged 25 to 64 (see our discussion of Map 18) and among the 30-to-34-year-old group (see our discussion of Map 15). All Turkish regions (i.e. another 16 regions in addition to the 10 listed in the table above) had NEETs rates of 20% or above in 2010; the Turkish region with the lowest proportion of NEETs was the northern region of Kastamonu, located on the coast of the Black Sea, with a rate of 22.9%. Turkey's very high rates of NEETs is not surprising in the light of earlier discussions on early school leaving (Map 11), where Turkish regions were all at the bottom of the ranking as well. However, it is worth noting that while the 10 poorest performing regions in terms of early school leaving had rates of between 46.4% and 69.3%, the NEET figures presented in Table 8.2 and on Map 20 are about 10 to 15 percentage points below this. This suggests that there is scope for employment in Turkey following early school leaving, although it is limited. Regions with the highest rates of NEETs in Turkey are concentrated in the eastern part of the country, in areas where

there is no major cluster of economic activities (Republic of Turkey, 2007), suggesting that they are more remote, non-industrial, rural areas.

Among the other regions that experienced rates of 20% of NEETs or above in 2010, a significant number are located in the eastern part of the Danube Space, in South East Europe, around the Mediterranean Basin, and in the Northern Periphery/northern part of North West Europe (i.e. in parts of the UK and in Ireland). In terms of identifying a broad geographical pattern of the distribution of regions with higher rates of NEETs, we could say that peripheral regions of Europe prominently feature in this category. When comparing data from 2008 and 2010, it looks like this peripheral pattern seems to have developed or to have been consolidated in the past few years in places where the most recent financial and economic crisis has hit the hardest. While 52 regions for which we have reliable data have reduced their percentage of NEETs over the 2008-2010 time period (including, quite notably, 8 Turkish regions, the Niederösterreich region in Lower Austria, and South Yorkshire in the UK, which have reduced NEETs rates by more than 20%), 19 regions show increases of more than 50% in their rates of NEETs between 2008 and 2010. This alarming trend has affected regions located in Spain, Southern Italy, Ireland, Romania, Macedonia, Bulgaria and parts of Northwest England. Cumbria, for example, which was the region with the highest proportional change in early school leavers between 2008 and 2010 as per our discussion of Map 13, emerges as one of the regions that has seen the most dramatic increases in its NEETs rate between 2008 and 2010. Again, these peripheral regions of Europe are among those that have been affected the most by the crisis, indicating that the research (see, for example, Quintini and Martin, 2006; Bell and Blanchflower, 2010) suggesting that young people are hit proportionally more in a recession hold up.

The concept of NEET is a key indicator to inform Europe's growth policy and to make sure that it is inclusive and sustainable. However, while the indicator was initially developed due to concerns about youth being 'at-risk', Marshall (2012) argues that "not all NEET youth are at risk, and specifically targeting this group may come at the expense of others in greater need of policy interventions". This distinction between young NEETs that are 'at risk' – of poverty, social exclusion etc. – and those that are not calls for a more nuanced understanding of profiles within this group

across different parts of Europe in order for policy to target the 'right' group, i.e. those who are most at risk and require priority intervention.

7. Smart Growth: Education Overview

7.1 Regions or Cities suffering weaknesses

We have identified a number of regions that suffer particular weaknesses in terms of education, in particular with respect to early leavers from education, NEETs and levels of tertiary education attainment. One of the most striking patterns that emerge from our analysis is the multiple weaknesses of South East Europe, especially Turkey, beginning with very high levels of early school leaving. Only one region in north-eastern Greece (Kentriki Makedonia), bordering the Danube Space macro-region, is in the top achiever category with a reduction in the early school leaving rate from 2008-2010 and a current status that is only 0.5% beyond the national target. Other regions performing poorly in terms of early school leaving, with rates above 30%, are in the Mediterranean Basin, specifically in Spain, Portugal and Malta. A range of structural economic reasons may explain this pattern, including – but not limited to – an abundance of low-paid unqualified employment in agriculture, construction or tourism to name a few sectors, lower shares of GDP spent on education, and high levels of migration. Within the Danube Space, many regions in Bulgaria and Romania are outliers as their rates of early school leaving are significantly higher than other countries in the eastern part of Europe.

In terms of broad geographical patterns, we can identify a general divide between southern and northern Europe, with the former experiencing higher rates of early school leaving than the latter. Another spatial pattern that emerges from our analysis is a tendency to higher rates – between 20 and 30% – in remote and outermost areas, as well as coastal zones, such as Iceland; the Scottish Highlands and Islands, West Wales, the Tees Valley and Cumbria in the United Kingdom (UK); several regions of Portugal, Spain and Italy; and Corsica in France. Several regions experiencing the highest rates of early school leaving, in particular in Turkey, are quite far from the national targets identified in the National

Programme for Reform. The trend towards higher rates of early school leaving at the regional level in the southern part of Europe was confirmed by our analysis of data at the urban scale, which highlighted southern European cities in general as problematic, but especially those in Spain (with 10 Spanish cities at the bottom of our ranking of school non-completion, ranging from 29.1% in Santa Cruz de Tenerife to 37.3% in Valencia), and to a lesser extent in Greece and Bulgaria. At the national scale, Portugal is struggling to meet its national target; this is due to a large extent to the fact that they have set an ambitious target of 10%, in line with the overall Europe 2020 Strategy headline target when the national rate of early school leaving was still at 28.7%. Four Portuguese regions are listed among those most distant from national targets in 2010 actually experienced the biggest proportional changes from 2008-2010, indicating that there is a real and determined focus on reducing early school leaving in this country. Noticeable strides in reducing early school leaving have been particularly apparent in Greece, Turkey and Spain.

While some low-performing regions are showing encouraging signs in terms of closing the gap between their current rates of early school leaving and their respective national targets, our analysis has also led us to identify a small – but worrying – number of regions that were within the 10% target in 2008 and that had fallen outside of it by 2010, with rates up to 14.2%. Apart from one region in Hungary, all of these regions are located in North West Europe (in France, Germany, and Belgium), in the UK (north-eastern Scotland) and in Scandinavia (in Finland). This highlights the risk that high achieving regions may become complacent and lose sight of the importance of reducing and maintaining low level of early school leaving. Another modest but alarming trend that we have identified through our analysis is that of very significant increases (of over 40%!) in early school leaving in particular in parts of North West Europe (in the UK, France, Germany, and Belgium), as well as in the southern part of the Baltic Sea Region (in Poland) and in the Danube Space (in Romania and Croatia).

The broad territorial patterns emerging from our analysis of tertiary education attainment are partly similar to and partly different from those encountered in our analyses of early school leaving. The poorest performers in terms of tertiary qualifications within the 30-34 year old cohort are to be found in South East Europe, particularly Turkey, and in the outermost regions of Portugal (the

Azores archipelago) and the mountainous 'spa region' of Severozápad in the Czech Republic. These regions have a significant distance to go to reach the headline target of 40% of tertiary or equivalent education attainment among people aged 30 to 34 by 2020. In addition to the 'bottom ten' regions, a further 61 regions were below 20% of tertiary education attainment among those in their early thirties, overwhelmingly concentrated in the eastern part of Europe, primarily in the Danube Space and South East Europe, as well as the southern part of the Baltic Sea Region and the eastern part of the Mediterranean Basin. Most of those regions where rates of tertiary education attainment are low – i.e. below 20%, which is half of the European target – are characterized by economic structures dominated by labour-intensive activities that traditionally do not require advanced education, namely: agriculture, heavy industries and traditional manufacturing, and tourism. However as far as Turkey is concerned, there is an interesting and encouraging trend to note: our analysis has revealed that many Turkish regions are performing better in terms of tertiary educational attainment among the younger group (30 to 34 years old) than among the broader working age population (25 to 64 years old). This suggests a general up-skilling of the population as well as potential improvements in education, in line with the objectives of the Europe 2020 Strategy.

The overall European target for tertiary educational attainment among people aged 30-34 is 40% by 2020, and most of the highest-performing regions on this indicator are scattered across Europe, displaying no particular spatial pattern other than the fact that a lot of them are regions that encompass or border capital cities. Quite interestingly, a significant proportion of the poorest performers are actually located in the western rather than the eastern half of Europe, with four German regions and three regions from the Iberian Peninsula – although two of them are the outermost regions of Melilla and the Azores. In addition to the peripheral and scarcely populated character of some regions, most low performing regions in terms of distance to national targets are not metropolitan regions but are typically agricultural regions, touristic ones, or old industrial regions that have suffered from deindustrialization in the past few decades. This is the case for several German regions that are among the lowest performers in our ranking. Simultaneously, other German regions are very close to their national target for 2020 (42%), pointing to a very uneven geography of tertiary level attainment perhaps linked to an uneven

geography of employment opportunities for highly qualified workers within Germany. At the urban scale, it is interesting to note that the geography of low performers in terms of tertiary education attainment is dominated by cities that were at the heart of old industrial basins traditionally not requiring a highly qualified workforce. Many of these cities are in the Danube Space, more precisely in Slovakia, Hungary and Germany.

This points to a need to re-think training and educational provision cognisant of labour market needs, an issue of particular significant to the 'NEET population', i.e. that portion of 15 to 24 year olds who are 'not in education, employment or training'. From a geographical standpoint, the area that faces the biggest NEETs problem is Turkey, particularly in its remote eastern and southern parts. More generally, peripheral regions feature prominently among the regions with the highest rates of NEETs, alongside those regions that have been most affected by the economic crisis since 2008 and have experienced hikes of more than 50% in their proportion of NEETs, including in Spain, Southern Italy, Ireland, Romania, Macedonia, Bulgaria, and parts of northern England. This reminds us that young people are typically hit proportionally more by recessions, justifying a continued and strengthened focus on youth in national and European policies.

7.2 Regions or Cities showing strengths or potential

While our analysis of tertiary education attainment, among the general working age population and the younger generation aged 30-34, has shown that many parts of eastern Europe lag behind their western counterparts, our analysis of early leavers from education illustrates the contrary with Croatia, Slovakia, the Czech Republic and Poland, all top-performers. At the national scale, several countries have already have exceeded the 10% headline target set by the Europe 2020 Strategy, most of them in the eastern part of Europe again – Lithuania, Poland, Slovakia, Croatia, Slovenia, and Serbia – in addition to Switzerland and Luxembourg. Overall, the Danube Space (except for Bulgaria and Romania) and the southern part of the Baltic Sea Region are doing well in terms of maintaining early school leaving at low rates, including most of Austria and 12 regions of Germany along the eastern and southern borders. In North West Europe, the Northern Periphery, and the

Scandinavian part of the Baltic Sea, several regions have also already reached the target of less than 10% of early leaving from school: a quarter of Belgium's NUTS2 regions, almost half of the Dutch regions, half of Ireland's regions, two regions of the UK and nine French ones, alongside over a third of Sweden's regions, one region in Finland, and one in Denmark. Many parts of North West Europe (Benelux, Germany, France, the northern part of Italy, parts of the UK) and the Baltic Sea Region show strong potential to meet their national target in the sense that they were within 5 percentage points of it in 2010. Moreover, a few of these regions are also among those with the lowest levels of NEETs – i.e. people aged 15 to 24 not in education, employment or training – in particular, The Netherlands and Scandinavia. Other top performers in terms of low levels of NEETs (i.e. 5% or below) were the capital region of the Czech Republic and the eastern part of Switzerland (the Ostschweiz region). Overall, lower levels of NEETs are generally found in the Baltic Sea Region, the western part of the Danube Space and North West Europe, although it is important to keep in mind the heterogeneity of these macro-regions insofar as some regions within them are poor performers (more than 20% of NEETs) or show an alarming pattern of increasing NEETs levels between 2008 and 2010 (e.g. in parts of the UK, in Northwest England in particular).

Many of the top-performing countries– i.e. where they have already reached or exceeded the national target or are within close range – have also set the most ambitious national targets. This indicates a desire to maintain an initial advantage and translate it into a major economic strength by producing a well-trained workforce and/or ensuring high tertiary level participation, another key objective of the Europe 2020 Strategy. Moreover, some of the regions that have the lowest rates of early school leavers are also those that have experienced the greatest proportional changes – positive changes of rate reductions – indicating that they are not becoming complacent about this issue. From a broad spatial perspective, the greatest improvements in reducing early school leaving (2008-2010) occurred in Europe's peripheral or lagging regions in Turkey, Greece, Portugal and Spain, suggesting that policies developed in these countries to tackle the issue have been rather successful, albeit that they have a long way to go to achieve their targets.

Although our analysis does not facilitate the identification of a potential urban/rural divide in early school leaving, cities generally

seem to be faring better than regional averages. Finnish and Irish cities are doing particularly well and constitute the top-10 performers, with rates of compulsory education non-completers ranging from 0% for Oulu in Finland to 0.9% for Dublin in Ireland. Interestingly, these cities are also important centres for NBIC technologies (nanotechnology, biotechnology, information technology, and cognitive science – as discussed in our Research and Innovation Overview) and for high-tech and technology-intensive activities. This suggests a significant correlation in urban settings between lower rates of early school leaving and the development of knowledge-based economic activities. Crucially from a policy perspective, what this might also suggest is the existence of a relationship between attitudes toward secondary schooling and perceptions of future employment opportunities as well as further – in particular tertiary or equivalent – training opportunities.

Both of these opportunities – tertiary education and employment, in particular for highly qualified tertiary level graduates – tend to be greater in cities, as clearly shown by our analysis of tertiary education attainment. The top performers in terms of this indicator are all – except one, namely the País Vasco region in northern Spain – capital city regions or regions bordering a capital city region. That includes Inner London, which both 'produces' and 'consumes' (i.e. attracts and retains) tertiary level graduates in significant numbers (66% of the population aged 30-34 and 53.1% of the 25-64 age group in Inner London has a tertiary education in 2010), the capital regions of Scandinavian countries, the capital region surrounding Paris in France, and the regions bordering the capital regions of the Benelux countries. In all of these regions, in North West Europe and Scandinavia, over 50% of the population aged 30 to 34 had a tertiary education in 2010, highlighting the importance of the urban in general, of capital city's status in particular, and of university centres and high-tech growth poles, in producing, attracting and retaining highly educated workers. Not surprisingly, many of these regions are also performing very well in terms of various Research and Innovation indicators, making them the main drivers of Europe's knowledge-based economy today.

This does not mean that other regions in Europe are not showing potential as strong contributors to the development and sustainability of Europe's pool of highly-educated workers (i.e. trained at tertiary level as per our analysis). These include regions

outside of North West Europe and Scandinavia, such as Bucureşti – Ilfov: the capital region of Romania was 13.1 percentage points above its national target in 2010, a national target that is, admittedly, the lowest of all EU member-states at 26.7%. Nevertheless, the Bucharest region is still performing exceptionally well in its national and European context, with 39.8% of 30-to-34-years-old with a tertiary education i.e. only 0.2% percentage points below the EU headline target of 40%. Although this region happens to be a metropolitan region as well – like most of the top performers in 2010 – not all regions that have shown the greatest positive changes in their proportion of 30-to-34-year-olds with a tertiary education between 2008 and 2010 are urban regions. In fact, these have quite diverse profiles: some are urban, some are rural; some are peripheral regions, some are much more central. No clear geographical pattern has emerged from our analysis of regions that have experienced the greatest improvements in terms of tertiary education attainment among the younger generation.

7.3 Policy implications

Our analysis has identified a number of strengths, weaknesses, positive trends and challenges across Europe with respect to education and training, in particular with respect to completion of compulsory education and to tertiary educational attainment. While Europe's cohesion policy aims to enable all regions to develop their full potential in order to promote more balanced regional development (EU, 2011d), our analysis has led us to a similar conclusion to the one that has emerged from our analysis of research and innovation indicators. A 'one-size-fits-all' approach focusing solely on convergence toward headline targets would not deliver Europe's 'smart growth' objectives. In line with the statements of the Territorial Agenda 2020 document, we argue that "smart, sustainable and inclusive growth can only be achieved if the territorial dimension of the strategy is taken into account, as the development opportunities of the different regions vary" (Territorial Agenda 2020, paragraph 5). Within this context, the policy implications are outlined below.

7.3.1 Spatial targeting of education & training policy and investment

- A series of broad East-West and North-South divisions exist across Europe, depending on the indicator under investigation. The clearest broad pattern is the 'lagging' status of South East Europe and most regions of the Mediterranean Basin. Policies at the European level – supported, for example, through the European Structural Funds and various EU programmes in education and training – should consider targeting these regions as a priority. However, while the general European Structural Funds and specific education and training initiatives can play a role in reducing early school leaving, the proportion of NEETs among the youth population and in improving rates of tertiary level attainment in particular in South East Europe and around the Mediterranean Basin, these need to be spatially nuanced rather than simply being allocated on the basis of broad convergence / transition type zoning.

- The needs of the most obviously lagging countries and regions in South East Europe and around the Mediterranean Basin should not preclude the needs of smaller regions outside of these macro-regions being met. Attention must be paid, in particular, to the alarming trends displayed by some scattered regions within North West Europe of falling significantly behind their national averages. Among these countries that have been showing signs of education and training polarization are the United Kingdom and Germany – these are characterized in particular by a very uneven geography of tertiary education attainment, perhaps more linked to retention rather than attraction of highly qualified workers. This has major implications for the innovative potential of these regions.

- In terms of targeting particular geographical environments or settings (e.g. urban or rural), it is very difficult to make particular recommendations. On the one hand, tertiary level attainment is higher in large, central metropolitan areas than in rural, peripheral regions, but this is not necessarily something to 'act upon' given that it is often down to a reflection of job opportunities, which tend to be much more abundant for highly-educated workers in cities or urban regions, in particular in and around capital cities. On the other hand, early school leaving is both a rural and outermost phenomenon and a phenomenon of urban disadvantage. Policies aiming at reducing early school leaving must address

issues across this broad spectrum of geographical settings, which might require different approaches (e.g. the reasons underlying early school leaving might be very different in the Turkish countryside and in the disadvantaged suburbs or 'banlieues' of Paris) but also integration with a range of other policies for example in relation to accessibility, infrastructure and the digital society.

7.3.2 Defining, aligning and combining targets and standards

- The previous points lead us to question the usefulness or appropriateness of setting European and national targets. On the one hand, there is a very broad range of national targets across Europe – for example from 47% of 30-34 year olds in Belgium to 26.7% in Romania having a tertiary educational qualification. This casts some doubt on the usefulness of overall European targets – 10% of early school leavers and 40% of 30-to-34-years-old with a tertiary education by 2020 – and national targets. Instead of, or in addition to, national targets it might be more realistic and appropriate to consider regional performance targets; these would be cognisant of the range of 'departure points' between and more importantly within countries. This is clearly illustrated by the case of Germany in relation to tertiary education attainment among those aged 30-34. Germany has set a national target of 42%; three German regions were within 5 percentage points of achieving this goal in 2010, yet four German regions appeared in the bottom-ten regions in Europe being over 20 percentage points away from the national target.

- Targets should also take account of the needs of particular – national or regional – job markets; implying a necessity in aligning educational provision and standards with the needs of labour markets. For example, Turkey has very low levels of tertiary education attainment compared to many regions of Europe. Although some level of convergence with the rest of Europe would be desirable especially in the context of potential EU membership, but what benefit would be provided by investing in up-skilling a large portion of the population – in particular the younger generations – to tertiary level if there are no jobs to match this level of education and training? The risk would be to induce higher unemployment and/or encourage brain-drain through outmigration of the highly-educated Turkish youth to other parts of Europe, or the world at high economic cost. Education and training policies therefore need to be holistic, geographically-sensitive and integrated with broader economic concerns.

- According to projections, by 2020 the share of jobs for low-skilled and unskilled workers will reduce from 20% to 15%. Increasing levels of educational attainment, where needed, remains crucial in developing and strengthening Europe's knowledge-economy and ensuring competitive advantage at the global scale. High rates of early school leaving, in combination with demographic change, risk increasing the shortage of skilled labour and restricting 'smart growth'. Therefore, should the EU consider raising the compulsory age of school attendance to 18 as is already the case in some countries (e.g. in Hungary at present or in the UK by 2015)? In the context of accession negotiations, it would seem appropriate to suggest raising the age when compulsory education ceases in Turkey, which is currently at the age of fourteen.

- Although not specifically a policy implication, our analysis has highlighted the weaknesses in the comparability of education data across Europe. In order to facilitate the development of appropriate and relevant policy, the European Union needs to identify a set of methodological standards for educational data, considering in particular the type of information needed, the collection process, sampling issues, the most appropriate scale to collect and collate data and the potential to standardise the data collection timetable to ensure temporal comparability.

7.3.3 Adopting a flexible, time- and place-sensitive approach to education and training policy

- Our examination of early school leaving has highlighted that the character of national education systems seems to be an explanatory factor in relation to this indicator. Countries that operate systems that practically demonstrate the relevance of learning seem to have much lower levels of early leaving. More flexible learning may make for a more authentic, and seemingly relevant, educational experience for students as for example in Slovakia or the Czech Republic where school and work experience are effectively combined in a structural manner. This idea has been recommended by the European Council (EU, 2011e) who state that "more workplace and entrepreneurial learning experiences should be encouraged, and opportunities for voluntary activities, self-employment and working and learning abroad expanded" but this now needs to be operationalised through specific policies and incentives.

- Finally, policy-makers must keep in mind that the 'right' targets for different countries, and how likely countries are to reach both European and national targets, is highly dependent on particular geo-historical contexts – e.g. London's position in the international division of labour as a leading global financial hub since the 1980s, attracting a very important number of highly-educated workers, versus Turkey or Portugal's reliance on sectors of the economy that typically require very few highly-skilled workers. In addition to the variety of geo-historical contexts across the European territory, a crucial set of conditions that need to be taken into consideration when developing future education and training policies, initiatives and programmes is the variety of legal and institutional contexts within which they take place across Europe, including, for example, the level of centralization of the state – and, therefore, of education policy –, and the existence of fees to access higher education that can make it harder to reach higher rates of tertiary education attainment, in particular in times of recession.

8. References

Australian Council for Educational Research (2000): *Early school leaving and 'non-completion' in Australia*. LSAY Briefing Reports, n.2. Online at: http://research.acer.edu.au/lsay_briefs/1

Barro, R.J. and Lee, J.W. (2010): *A new data set of educational attainment in the world, 1950–2010.* NBER Working Paper No. 15902. Cambridge, MA: National Bureau of Economic Research.

Bell, D.N.F. and Blanchflower, D.G. (2010): *Young People and Recession: A Lost Generation?* Economic Policy: 52nd Panel Meeting, October 22-23, 2010. University of Stirling, Stirling, Scotland. Centre for Economic Policy Research. Online at: http://www.cepr.org/meets/wkcn/9/979/papers/Bell_%20Blanchflower.pdf

Carneiro, P. (2006): *Equality of Opportunity and Educational Achievement in Portugal*. Presented at Conference on Economic Development in Portugal. Online at: http://www.ucl.ac.uk/~uctppca/5.pdf

Cumbria County Council, Cumbria NHS and Cumbria Intelligence Observatory (2012): Cumbria Joint Strategic Needs Assessment: Cumbria Statistical Summary. Online at: http://www.cumbriaobservatory.org.uk/elibrary/Content/Internet/536/671/4674/5359/5360/40942161416.doc

DEMIFER Demographic and Migratory Flows affecting European Regions and Cities (DEMIFER, 2010): *Final Report. Applied Research*. Online at: http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/DEMIFER/FinalReport/Final_report_DEMIFER_incl_ISBN_Feb_2011.pdf

EU (2009): *Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020')*, OJ C119. Brussels.

EU (2010a): *The European Platform against Poverty and Social Exclusion: A European framework for social and territorial cohesion*. COM (2010) 758, Brussels.

EU (2010b): *Youth on the Move: An initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union*. COM (2010), 477. Brussels.

EU (2010c): *The European Platform against Poverty and Social Exclusion*, COM(2010) 758. Brussels.

EU (2010d): *Investing in Europe's Future: Fifth report on economic, social and territorial cohesion*. Luxembourg: European Union.

EU (2010e): *Europe 2020 Flagship Initiative – Innovation Union.* COM (2010), 546. Brussels

EU (2010f): *An Agenda for New Skills and Jobs*. COM (2010), 682. Brussels.

EU (2011a): *Annual Growth Survey 2012*. COM (2011) 815, Brussels.

EU (2011b): *Tackling Early School Leaving: A Key Contribution to the Europe 2020 Strategy,* COM (2011) 18, Brussels.

EU (2011c): *The urban and regional dimension of Europe 2020: Seventh progress report on economic, social and territorial cohesion*. Luxembourg: European Union.

EU (2011d): *Regional Policy contributing to sustainable growth in Europe 2020*, COM (2011) 17, Brussels.

EU (2011e): *Council conclusions on the role of education and training in the implementation of the 'Europe 2020' strategy,* (2011/C 70/01), Brussels.

EU (2011f): *Territorial Agenda 2020 - Towards an Inclusive, Smart and Sustainable Europe of Diverse Regions*, Gödöllő, Hungary.

European Commission (2010): *Reducing early school leaving: Accompanying document to the Proposal for a Council Recommendation on policies to reduce early school leaving*. Brussels.

European Commission (2011): *Early school leaving in Europe – Questions and answers*, MEMO/11/52. Brussels.

European Commission (2011): *The structure of the European education systems 2010/11: schematic diagrams*. Brussels: EURYDICE.

European Commission (2012): *Conference Report: Reducing Early School Leaving – Efficient and Effective Policies in Europe*. Brussels: DG for Education and Culture.

European Communities (2007): *Growing regions, growing Europe: Fourth report on economic and social cohesion*. Luxembourg: European Union.

Fernández-Macías, E., Antón, J.I., Muñoz de Bustillo, R. & Braña, F. (2012): "Early school leaving in Spain: Evolution, Intensity and Determinants", *European Journal of Education* (forthcoming). Online at: http://web.usal.es/~janton/Files/Docs/EFM%20et%20al%20%28forthcoming%202012%29%20EJE.pdf

FOCI Future Orientation for Cities (FOCI, 2010): *Executive Summary. Applied Research*. Online at: http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/FOCI/FOCI_FinalReport_ExecutiveSummary_20110310.pdf

Hammarström, A. and Janlert, U. (2002): "Early unemployment can contribute to adult health problems: results from a longitudinal study of school leavers", *Journal of Epidemiology and Community Health*, 56, 624-630.

Isusi, I. (2010) *Young people, employment and training*. Dublin: European Foundation for the Improvement of Living and Working Conditions. Online at: http://www.eurofound.europa.eu/ewco/2010/06/ES1006021I.htm

King, A. (1999): *The cost to Australia of early school-leaving: technical paper*. Sydney, NSW: Dusseldorp Skills Forum. Online at: http://hdl.voced.edu.au/10707/68919

KIT Knowledge, Innovation, Territory (KIT, 2011): *Draft Final Report. Applied Research Project ESPON 2013.* Online at: http://www.espon.eu/export/sites/default/Documents/Projects/AppliedResearch/KIT/KIT_Draft-Final-Report_Scientific-Report_Volume_1.pdf.

Lucas, R.E. (1988): "On the mechanics of economic development", *Journal of Monetary Economics*, 22, 3-42.

Marshall, K. (2012): *Youth neither enrolled nor employed*, Component of Statistics Canada Catalogue no. 75-001-X. Perspectives on Labour and Income. Online at http://www.statcan.gc.ca/pub/75-001-x/2012002/article/11675-eng.pdf

OECD (2007): *Reviews of National Policies for Education - Basic Education in Turkey*. Paris: OECD.

Quintini, G. and Martin, S. (2006): "Starting Well or Losing Their Way? The Position of Youth in the Labour Market in OECD Countries". *OECD Social, Employment and Migration Working Paper No. 39*. Paris: OECD. Online at: http://www.oecd.org/dataoecd/0/30/37805131.pdf

Republic of Turkey (2007): *Regional Competitiveness Operational Programme (2007-2009)*. Ankara: Ministry of Industry and Trade.

Sassen, S. (2001): *The global city: New York, London, Tokyo*. Princeton, NJ: Princeton University Press.

Social Exclusion Unit (1999): *Bridging the gap: New opportunities for 16-18 year olds not in education, employment or training.* Online at: http://www.partnershipforyounglondon.org.uk/data/files/1419/bridging_the_gap_seu_1999.pdf

South West Regional Employment and Skills Partnership (2009): *Convergence ESF Framework (Refresh) FINAL DRAFT*. Online at: http://www.dwp.gov.uk/docs/cornwall.pdf

Statistics New Zealand (2011): *Introducing the youth not in employment, education, or training indicator.* Wellington: Statistics New Zealand.

Tomorrow's People (undated): *Rescuing a lost generation: A tomorrow's people report in partnership with Bristol University Centre for Market and Public organisation (CMPO)*. Online at: http://www.bristol.ac.uk/cmpo/publications/other/earlybirdtp.pdf

Van der Ploeg, F. and Veugerlers, R. (2007): "Higher education reforms and the renewed Lisbon Strategy: Role of member states and the European Commission". In Gelauff, G., Grilo, I. and Lejour, A. (eds.) *Subsidiarity and economic reform in Europe*. Kluwer: Dordrecht. 65-96.

www.espon.eu

The ESPON 2013 Programme is part-financed by the European Regional Development Fund, the EU Member States and the Partner States Iceland, Liechtenstein, Norway and Switzerland. It shall support policy development in relation to the aim of territorial cohesion and a harmonious development of the European territory.

ISBN