



Regional Focus

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THE EUROPE 2020 INDEX: THE PROGRESS OF EU COUNTRIES, REGIONS AND CITIES TO THE 2020 TARGETS

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1. INTRODUCTION

In 2015 the European Commission will review the Europe 2020 strategy.^[1] The review follows up on the recent public consultation and aims at improving and updating the Europe 2020 strategy, drawing lessons from the first four years of the strategy and ensuring it acts as an effective post-crisis strategy for growth and jobs in Europe.

EU Cohesion Policy will invest around a third of the EU budget in key areas in line with the Europe 2020 strategy for smart, sustainable and inclusive growth in 2014-20. To this end, a number of thematic objectives corresponding to the Europe 2020 priorities have been defined in the new legal framework. To maximise the impact of investment, Member States and regions need to concentrate EU funding on a limited number of these objectives in light of the specific territorial challenges they face and their development needs.

The urban and regional dimensions of Europe 2020 were first examined in the 7th Progress Report on economic, social and territorial cohesion^[2] in 2011 and subsequently in the 6th Cohesion Report^[3] in 2014. Two clear conclusions emerged from these reports and are confirmed by this Regional Focus. First, less developed regions are farthest removed from the 2020 targets. Second, cities in Cohesion countries^[4] are much closer to the 2020 targets than their towns, suburbs and rural areas are. Due to their strong performance, cities in Cohesion countries almost match the performance of cities in non-Cohesion countries. On average, the cities in non-Cohesion countries have an almost identical score as their towns, suburbs and rural areas, but in several countries the cities score below towns, suburbs and rural areas.

Overall, the crisis has made it harder to reach the employment and poverty reduction targets. The EU has made progress towards the research and development (R&D) target, but the trend is not strong enough to reach the target by 2020. Innovation remained highly concentrated in spatial terms and showed no signs of spreading to less developed regions. The EU has made progress towards both the renewable energy and greenhouse gas (GHG) emission reduction targets, although part of this is due to a drop in energy demand linked to the crisis. The progress towards the two education targets is encouraging, but a return to strong employment growth may stymie this progress.

This Regional Focus analyses where regions and cities stand *vis-à-vis* the Europe 2020 targets by extending and updating the analysis mentioned above. It uses three composite indicators to measure the progress of EU countries, regions and cities to the objectives of Europe 2020 strategy. The composite indicators at the national and the cities level are new and have not been presented before. The regional composite indicator was already included in the 6th Cohesion Report, but it has been updated and the method has been refined.

EUROPE 2020 HEADLINE TARGETS

Europe 2020 has five headline targets covering employment, education, poverty, innovation, climate change and energy sustainability. The targets are translated into seven EU indicators to measure progress towards their achievement (see table in the annex). To accommodate the heterogeneity of EU-28 countries, the European-wide targets were in most cases transformed into a set of national targets. For Member States without a national target, a target was imputed by the authors of this paper based on the national targets of Member States with a similar starting position (see annex).

For the national level, all five headline targets have been taken into account. Each country receives between 0 and 20 points for each target. If a country has reached a headline target, it receives 20 points. The countries furthest removed from this target get 0 points. The rest receive a score proportional to the distance to the target. The index is the sum of these points. If a country has reached all targets it scores 100.

Due to data availability, the climate change and energy sustainability targets had to be omitted at the regional level and innovation, climate change and energy sustainability at the city level. As result, at the regional level, each target is worth 25 points and at the city level 33 points. The construction of this index is for the rest identical to the national level. For more information see annex.

1 COM (2010) 2020 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF>

2 COM (2011) 0776 http://ec.europa.eu/regional_policy/information/reports/index_en.cfm

3 COM (2014) 473 http://ec.europa.eu/regional_policy/cohesion_report

4 EU Member States with a Gross National Income of less than 90% per head of the EU average and therefore eligible for the Cohesion Fund: http://ec.europa.eu/regional_policy/en/funding/cohesion-fund/

National level analysis

The biggest impact of the crisis occurred prior to 2010. As a result, EU employment and poverty rates barely changed between 2010 and 2012, though they deteriorated significantly between 2008 and 2010. The EU made progress towards all the other targets, in particular towards the education, climate change and sustainable energy targets, although both have been helped by the crisis. The crisis reduced industrial production which reduced energy demand and high unemployment rates encourage people to stay in education.

The three Baltic States have made the most progress to the EU targets. They increased their score by more than 10 index points (see Figure 1). Their improvement on all fronts is impressive. Their employment rates increased by four to five percentage points. R&D increased in all three, but especially in Estonia. Early school leavers dropped and tertiary education increased. Poverty or social exclusion rates remained below the EU target in Estonia, while Latvia and Lithuania made substantial progress towards the EU target. The share of renewable energy in electricity consumed increased, but GHG emissions^[5] also increased.

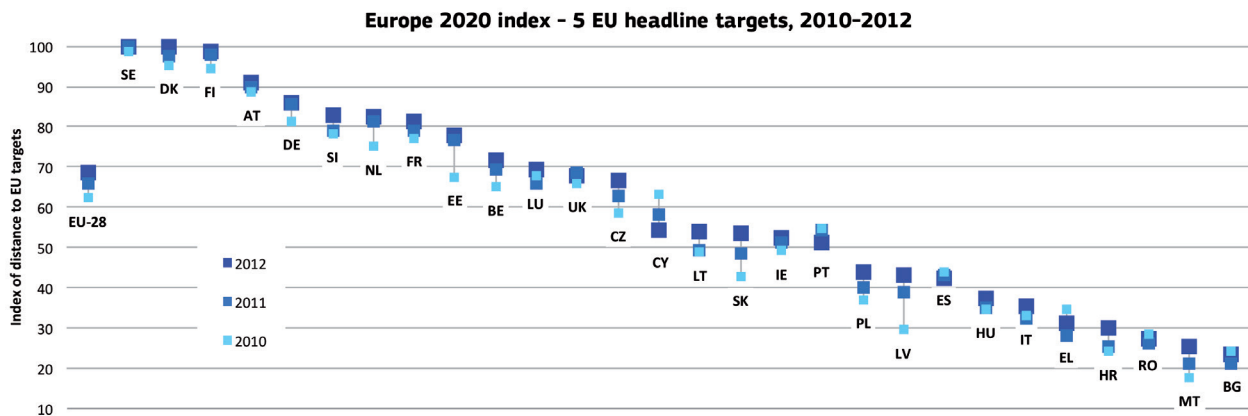
Six Member States saw their performance deteriorate, in large part due to the crisis. Cyprus had the biggest drop (-9), due to the drop in employment rate (by 5% points) and the increase in the poverty or social exclusion rate (+3% points). Greece and Portugal lost three index points between 2010 and 2012. In both cases, this deterioration was due to employment rate losses (-9 and -4% points) and increases in the poverty or social exclusion rate (+5 and +3% points).

In 2012, Sweden and Denmark have met or exceeded all the 2020 EU targets and Finland is very close to doing so as well. Bulgaria and Romania, on the other hand, are very far removed from these targets and have not made significant progress. Malta and Croatia are also very far removed from the targets, but have made some progress between 2010 and 2012.

Only two EU-13 Member States (MS that joined in 2004 or after) are in the top ten: Slovenia and Estonia. The bottom ten consists of seven EU-13 Member States, Greece, Italy and Spain.

FIGURE 1: The Europe 2020 index at national level under EU-wide targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets

Source: Authors' calculations based on Eurostat and EEA data



Let us now turn our attention to the national targets which differ in multiple ways from the targets set at EU level. For most targets, Member States (MS) did not have to set a national target. If a MS chose to set one, it could do this independently from the targets set by other countries. For example, Sweden and Finland set a 4% target for R&D, Cyprus set a 0.5% target, whereas the UK did not set an R&D target at all. As a result, the sum of the national targets for R&D is lower than the EU target.

For GHG emissions and renewable energy, all Member States have set binding targets in a coordinated manner so that the sum of the national targets is equal to or higher than the EU targets. For GHG emissions, this is organised through the effort sharing decision. This requires that the EU-13 Member States (with the exception of Cyprus) limit the increase in GHG emissions outside the Emission Trading Scheme (ETS), while the EU-15 Member States (the pre-2004 MS), with the exception of Portugal, have to reduce their GHG emissions outside ETS.

5 This analysis only considers GHG emissions outside the emissions trading scheme.

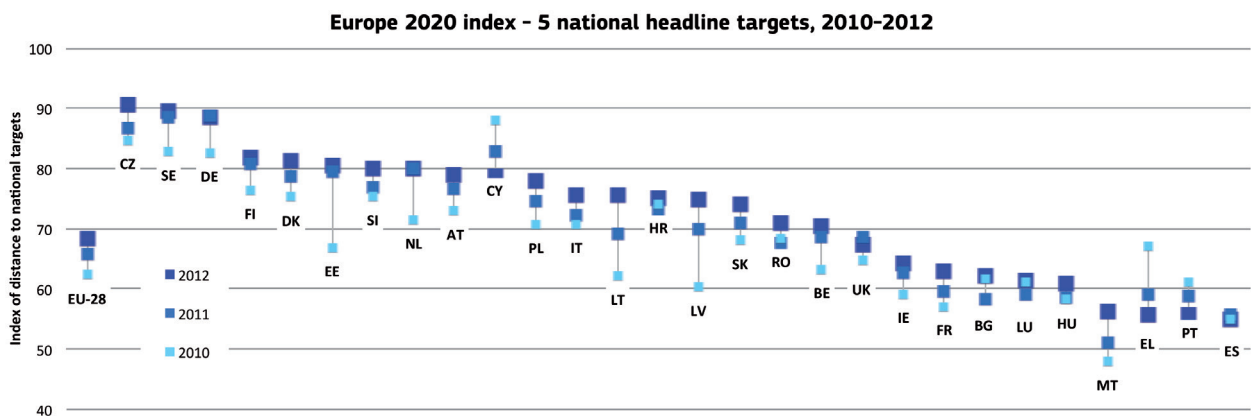
The national 2020 index shows a different and, overall, better score. This is because (1) although some national targets are more ambitious than the EU, most are (considerably) less ambitious and (2) most of the national targets do not add up to the EU target. This reduces the spread of the index and raises the overall performance. The lowest score is 23 for the Europe 2020 index compared to 55 for the national 2020 index in 2012. Countries that have picked less ambitious and/or more realistic, national targets do better. Also the countries that do not have to reduce their GHG emissions outside ETS do better, often significantly so (see Figure 2).

The effect on EU-15 countries is muted, as they do either mildly worse or mildly better under their national targets, with exception of Italy. Italy's score jumps from 35 to 76 when switching to national targets. Italy's national 2020 targets are considerably less ambitious: employment rate 67% vs 75%, R&D 1.5% vs 3% of GDP, early school leavers 16% vs 10%, tertiary education 26% vs 40%, poverty or exclusion 22% vs 19.5%, renewable energy 17% vs 20%. This effect is also apparent in the regional analysis (see below).

In contrast to the EU targets, Sweden and Denmark have not yet reached all their national targets as they picked more ambitious national targets. The Czech Republic is the Member State closest to reaching all its national targets. This is primarily because it has less ambitious targets for R&D (1% public compared to 3% total), tertiary education (32% vs 40%), renewable energy (14% vs 20%) and it does not have to reduce its GHG emissions outside the emissions trading scheme. However, it does have a more ambitious target for early school leavers (5.5% vs 10%) and poverty or social exclusion (14.9% vs 19.5%) as in 2010 it already had very low rates for both indicators. As with the EU targets, the Member States with biggest improvements are the Baltic States.

FIGURE 2: The Europe 2020 index at national level under national targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets

Source: Authors' calculations based on Eurostat and EEA data



The national level analysis shows progress towards most of the EU and national 2020 targets. The biggest impact of the crisis occurred prior to 2010 for most Member States, but the impact can still be seen in the results. For example, the progress towards the climate change and sustainable energy headline targets has been aided by a reduction in energy consumption. Portugal, Greece and especially Cyprus, however, still suffered setbacks due to the crisis after 2010, which is reflected in a poor performance on the 2020 index.

As the EU is slowly emerging from the crisis, the ambition should be to boost employment and reduce poverty while continuing to make progress towards the innovation, education, climate change and sustainable energy targets.

Regional analysis

Next we turn to the regional level. At this level no data on renewable energy or greenhouse gas emissions is available, therefore the climate change and sustainable energy headline target is not included in this analysis.

The regions in the Nordic Member States and many of the regions in Germany, Austria, UK, France and the Benelux score high on the Europe 2020 index relative to the EU targets (see Map 1), while the southern regions and those in the EU-13 tend to score low. Similar to the country level index discussed above, the index relative to the national targets shows a much more favourable score (see Map 2). Far fewer regions belong in the bottom classes relative to the national targets. For example, relative to the EU targets 59 regions score below 55, compared to only 28 relative to the national targets.

In 2014-2020, Cohesion Policy distinguishes between three groups of regions: more developed regions with a GDP/head of more than 90% of EU average, transition regions with a GDP/head between 75% and 90% of EU average, and less developed regions with a GDP/head of less than 75% of EU average.^[6]

According to this categorisation, the difference in terms of scoring in the Europe 2020 index between the three groups of regions is striking. Employment rates, tertiary education rates and the R&D as a share of GDP are far lower in less developed regions compared to the other regions. Only early school leavers do not follow this pattern, with the highest rates in transition regions. More developed regions, on the other hand, score in general much higher on Europe 2020 indicators than the two other groups of regions. As a result, the EU-index relative to the EU targets is only 37 in less developed regions, compared to 55 in transition and 76 in more developed regions. However, all three groups of regions must carry out efforts to reach Europe 2020 targets set at European level. Only the tertiary education target of (at least) 40% is reached in the more developed regions; none of the other targets is achieved in any of the three groups of regions.

TABLE 1: The Europe 2020 index of more developed, transition and less developed regions, 2012

	More Developed regions	Transition regions	Less Developed regions	EU target
Employment rate aged 20-64, 2012	72%	65%	61%	75%
Early school leavers aged 18-24, 2011-13	12%	17%	12%	below 10%
Population aged 30-34 with tertiary education, 2011-13	41%	32%	27%	at least 40%
R&D expenditure of GDP, 2011	2.3%	1.3%	0.8%	3%
Europe 2020 index – 4 EU headline targets, 2012	76	55	37	100

The at-risk-of-poverty-or-social-exclusion rate was not included in this table as this indicator is not yet available at the regional level in all Member States. Available figures, however, show that the risk of poverty or social exclusion is much higher in the less developed regions than in the other two categories of regions.

6 See Commission implementing decision of 18.2.2014 setting out the list of regions eligible for funding from the European Regional Development Fund and the European Social Fund and of Member States eligible for funding from the Cohesion Fund for the period 2014-2020 [C(2014) 974 final].

Let us now have a closer look at the changes in Europe 2020 index which occurred at regional level between 2010 and 2012. Only a small number of regions, i.e. eight regions or ca. 3% of total, were able to increase their score by more than ten points: the Baltic States, two Dutch and two UK regions and one Romanian (see Map 3). However, the scores of twice as many regions drop by ten points: ten Greek regions, two Spanish, two Portuguese, one UK region and Cyprus. The changes relative to the 2020 national targets are quite similar (see Map 4).

A look at the best/worst performing regions reveals the following picture: Five regions, including the three Nordic capital regions, have met all EU targets (see Table 2). The top ten regions consist of four Swedish, three German and one region in Denmark, Finland and Belgium. The bottom ten regions consist of four southern Italian regions, two Romanian regions, and one region in Spain, Greece, Bulgaria and Hungary.

TABLE 2: Top- and Bottom-10 performing regions in Europe 2020 Regional Index (listed in descending and ascending order, respectively). An asterisk denotes regions that meet or exceed all the EU targets

Top-10	Bottom-10
Hovedstaden – DK01*	Ciudad Autónoma de Ceuta – ES63
Helsinki-Uusimaa – FI1B*	Sicilia – ITG1
Stockholm – SE11*	Sud-Est – RO22
Östra Mellansverige – SE12*	Calabria – ITF6
Vastverige – SE23*	Severozapaden – BG31
Sydsverige – SE22	Puglia – ITF4
Oberbayern – DE21	Sterea Ellada – EL24
Vlaams-Brabant – BE24	Észak-Magyarország – HU31
Tübingen – DE14	Sud-Muntenia – RO31
Stuttgart – DE11	Campania – ITF3

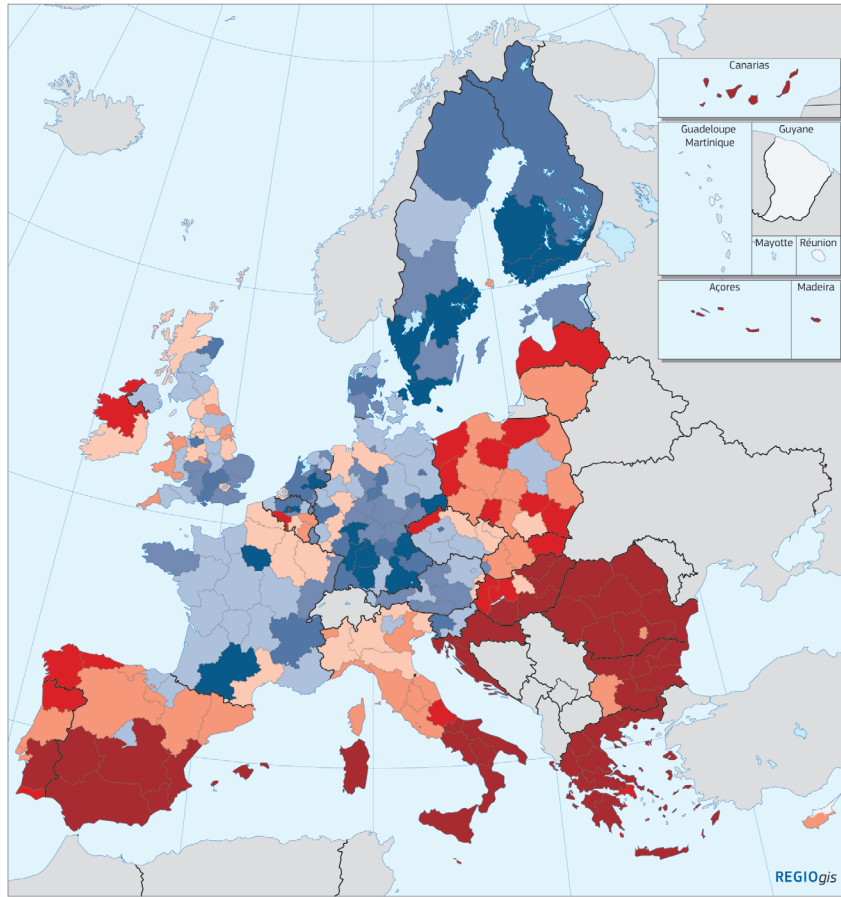
Capital regions are almost always among the top performers within countries (see Figure 3) and frequently outperform the EU-28 aggregate score. In a number of countries, the gap between the performance of the capital and next-best region is wide, for example in Bulgaria, Romania and Slovakia. As a result, the capital regions of Romania and Bulgaria outperform a number of EU-15 Member States such as Spain, Greece and Italy. The Bratislava region even outperforms 21 Member States.

The region of Brussels is a clear exception to general good performance of capital regions. It has a very low score of 29, which is primarily due to its low employment rates and high poverty rates. With a European-wide rank of 225 (out of 268), its performance stands in stark contrast to the rest of Belgium. Furthermore, this negative result is exacerbated when we consider Belgium's national 2020 targets (see Figure 4).

We can see large variation within countries, for example in Italy, Spain and Belgium. Although the size of the country matters, it is far from the only reason for variation. For example, the regional scores in the Czech Republic vary more than those in the UK.

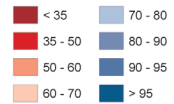
MAP 1

Source: Authors' calculations based on Eurostat and EEA data



Europe 2020 index - 4 EU headline targets, 2012

Index of distance to EU targets



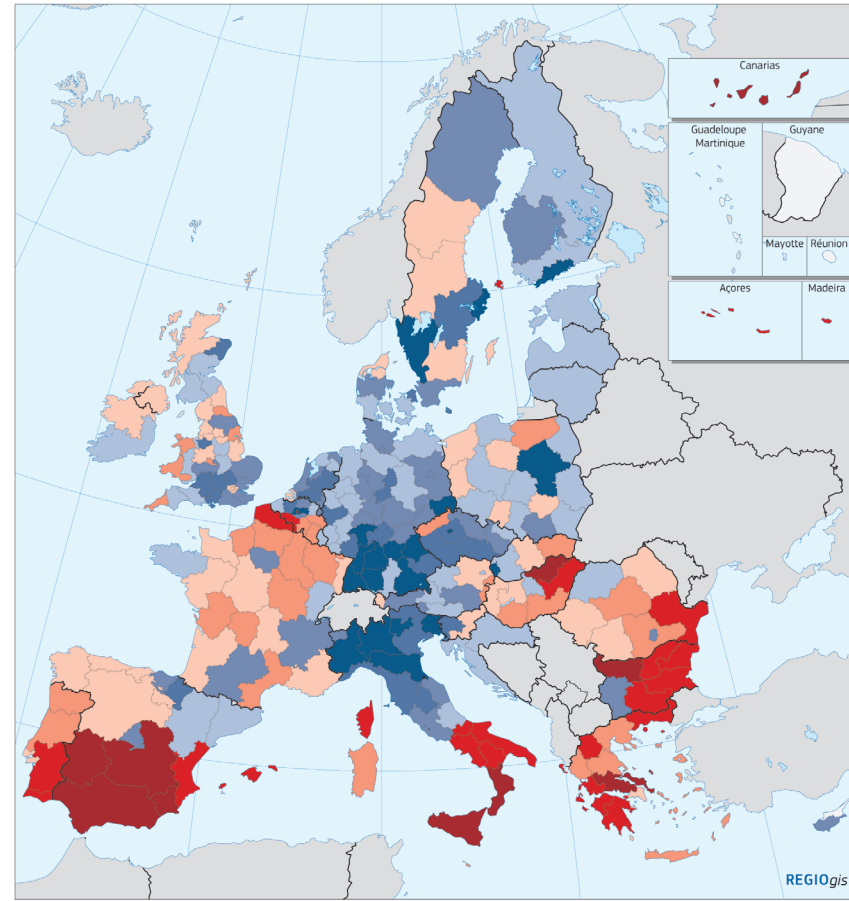
100 = meets or exceeds all targets
0 = farthest removed from all targets
EU average = 71.4

0 500 Km

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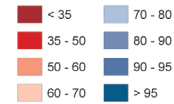
MAP 2

Source: Authors' calculations based on Eurostat and EEA data



Europe 2020 index - 4 national headline targets, 2012

Index of distance to national targets



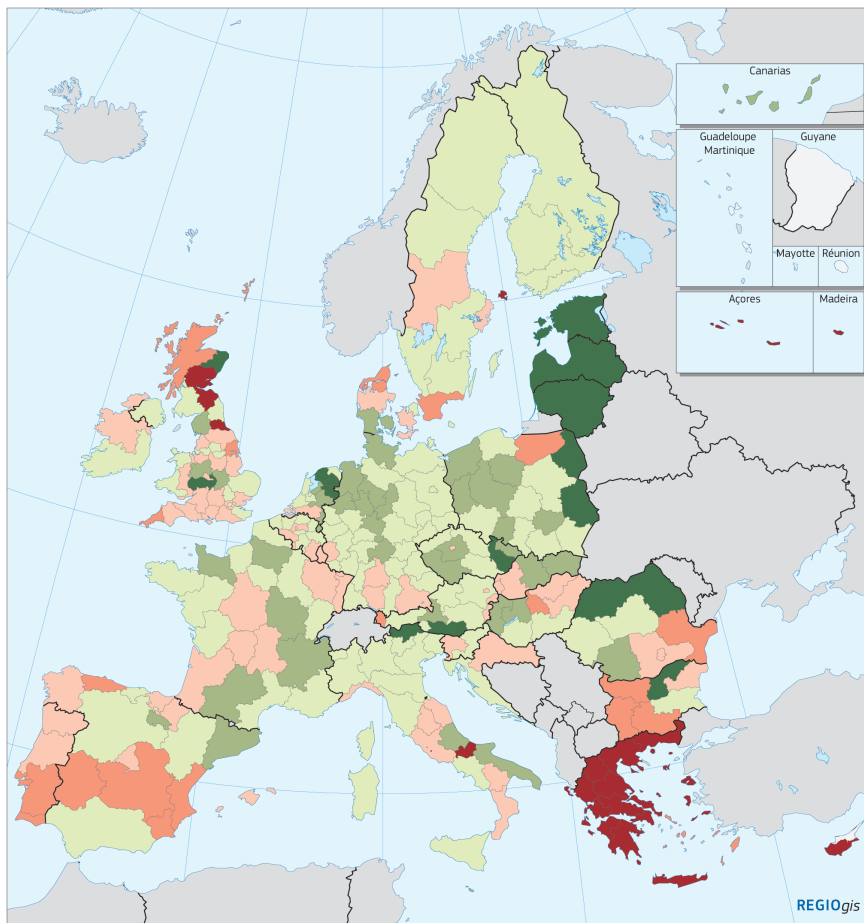
100 = meets or exceeds all targets
0 = farthest removed from all targets
EU average = 71.4

0 500 Km

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MAP 4

Source: Authors' calculations based on Eurostat and EEA data



Change in Europe 2020 index - 4 national headline targets, 2010-2012

Change in index of distance to national targets

- < -8
- -8 - -4
- -4 - 0
- 0 - 4
- 4 - 8
- > 8

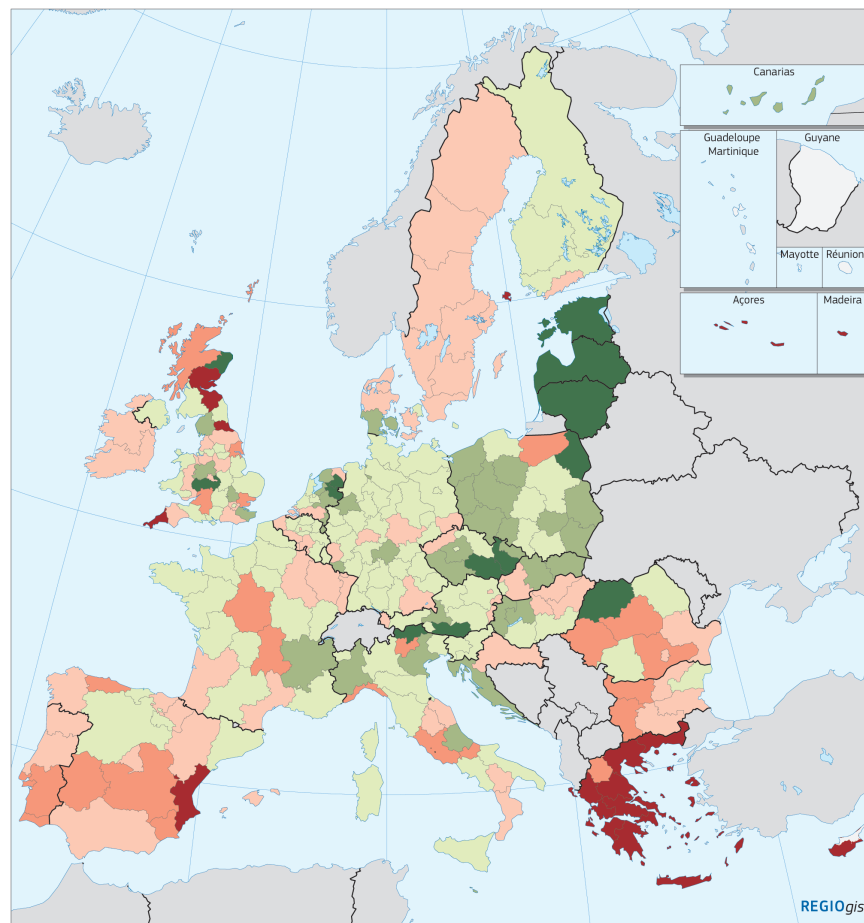
>0 made progress towards targets
 <=0 has not made progress towards targets
 EU average = 3



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MAP 3

Source: Authors' calculations based on Eurostat and EEA data

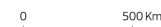


Change in Europe 2020 index - 4 EU headline targets, 2010-2012

Change in index of distance to EU targets

- < -8
- -8 - -4
- -4 - 0
- 0 - 4
- 4 - 8
- > 8

>0 made progress towards targets
 <=0 has not made progress towards targets
 EU average = 3



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FIGURE 3: The Europe 2020 index at NUTS 2 level under EU targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets

Source: Authors' calculations based on Eurostat and EEA data

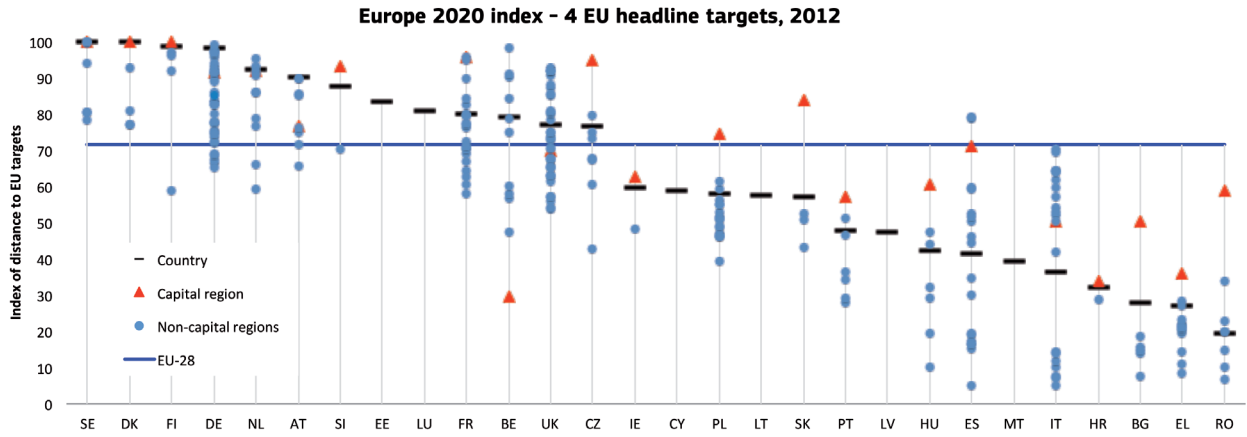
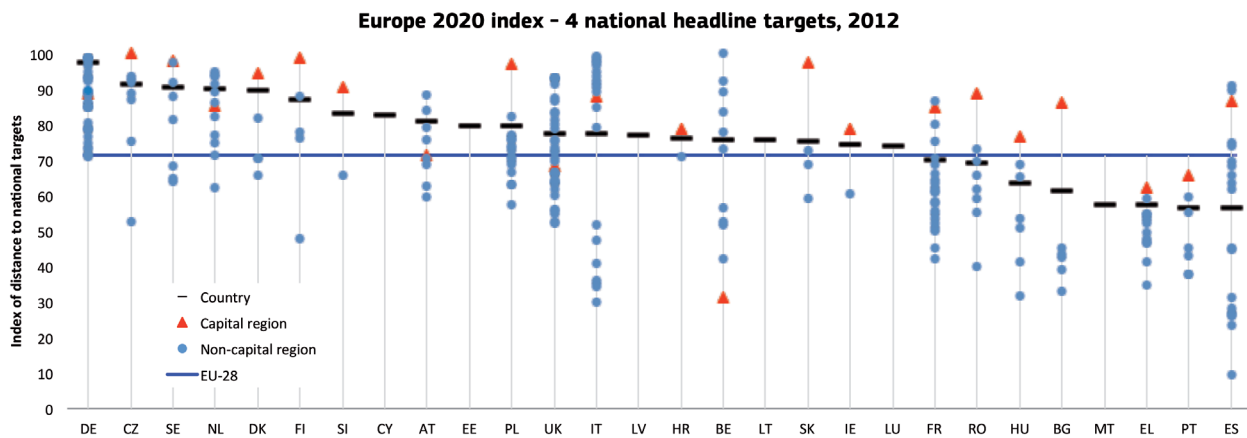


Figure 4 presents the regional index relative to 2020 national targets. Comparing it to Figure 3, we see that northern European regions by and large retain their primacy even under their more ambitious national targets. Meanwhile, southern and central-eastern European countries generally perform better, occasionally significantly so, for example in Italy. Overall, the less performing regions in more developed countries have a much lower score relative to the national targets than to the EU targets. The more ambitious national targets of these countries reduce the score, especially of their least developed regions.

FIGURE 4: The Europe 2020 index at NUTS 2 level under national headline targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets

Source: Authors' calculations based on Eurostat and EEA data



Cities compared to towns, suburbs and rural areas

We now move on to the third spatial level of analysis, i.e., by degree of urbanisation (DEGURBA). There are three degrees of urbanisation.⁷ The first corresponds to cities (or densely populated areas), the second to towns and suburbs (or intermediate density areas) and the third to rural areas (or thinly populated areas). For the purposes of this analysis, we combine the latter two categories into a single one (areas outside cities), since we are primarily interested in exploring the effects of cities on Europe 2020 performance. At this level no data on renewable energy or greenhouse gas emissions and R&D is available, therefore the climate change and sustainable energy and the innovation headline targets are not included in this analysis.

The analysis shows that cities score on average higher on the 2020 index than towns, suburbs and rural areas (see Figure 5). It also shows that cities in the Netherlands, Sweden and Finland have reached the employment, education and poverty reduction targets of Europe 2020 strategy. In Figure 5, countries are ordered by the difference in the scores of cities and of areas outside cities. It shows their score in 2012 and in a lighter colour the score in 2010. This reveals a number of striking patterns:

First, the difference between the score of cities and areas outside cities can be very high, especially in Cohesion countries (i.e. countries with a GNI/head of less than 90% of EU average and thus eligible for support from the Cohesion Fund in 2014–2020)⁸. For a number of countries, the cities' scores are more than three times as high as the other area ones (Lithuania, Bulgaria, Hungary, Romania). Other countries for which this spread is particularly high are Slovakia, Croatia, Poland and Latvia. On average, cities in Cohesion countries score twice as high on the Europe 2020 index as their towns, suburbs and rural areas do (66 vs. 32). On all four Europe 2020 indicators, these cities perform better especially on education. This big gap is primarily driven by the better employment opportunities and higher economic growth in cities in Cohesion countries.

Second, non-Cohesion countries cities do not perform better than their towns, suburbs and rural areas on the Europe 2020 index (i.e. 74 for both). In the Nordic Member States and the Netherlands, the differences are small, but in several non-Cohesion countries, such as UK, Belgium and Austria, cities perform less well. Cities in non-Cohesion countries face higher poverty or exclusion rates and lower employment rates than areas outside cities (see Table 3). In large part, this is because the educated and the affluent have suburbanised and the city centres attract a higher share of the poor and the unemployed.

The only indicator where these cities perform better than areas outside cities is tertiary education of the population aged 30–34. This can be explained by two factors: 1) most universities are based in cities and 2) many large cities have a more dynamic and specialised labour market, which is particularly attractive to university graduates in the start of their career.

Third, the cities in the Cohesion countries almost match the performance of cities in non-Cohesion countries. For example, the cities in Lithuania, Slovakia, Estonia and the Czech Republic score over 90, only the cities in Sweden, Finland, the Netherlands and Luxembourg score better. In Cohesion country cities, employment rates are slightly lower (66% vs. 69%) and poverty or exclusion rates are slightly higher (26% vs. 24%), but their tertiary education rates are equally high (44%) and the share of early school leavers (6%) is only half that of cities in non-Cohesion countries (13%) (see Table 3). One important distinction is that disposable household income is substantial lower in cities in Cohesion countries than in non-Cohesion countries. The 2020 index does not directly take household income into account. The poverty rate, which is part of the poverty or social exclusion rate, is measured relative to the *national* median household income. As a result, the same income level may be classified as at risk of poverty in a non-Cohesion country and not at risk in a Cohesion country.

7 See: <http://ec.europa.eu/eurostat/web/degree-of-urbanisation/overview>

8 Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Croatia, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia, Slovakia.

FIGURE 5: The Europe 2020 index by DEGURBA under EU targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets^[9]

Source: Authors' calculations based on Eurostat and EEA data

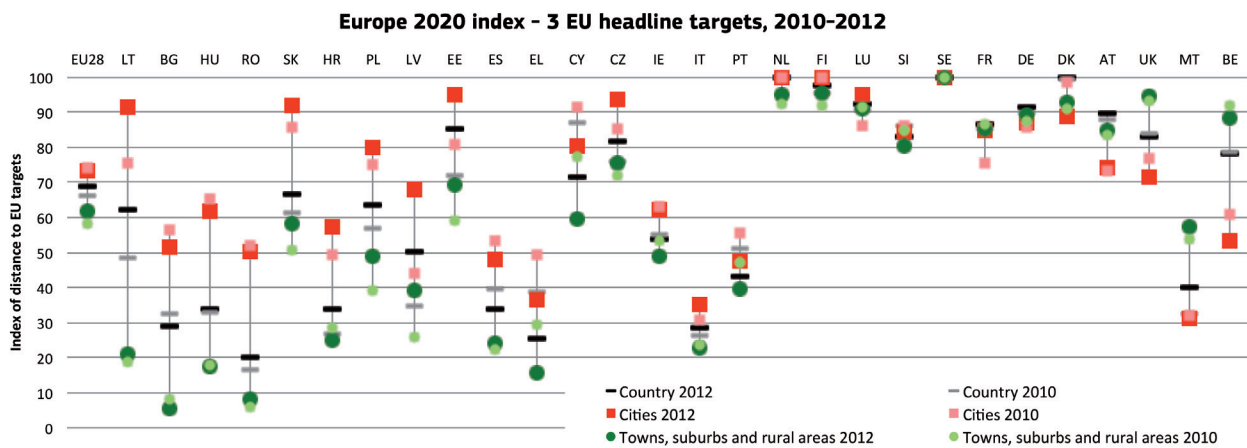


TABLE 3: Europe 2020 index and components in cities, towns, suburbs and rural areas in Cohesion and non-Cohesion countries, 2012^[10]

	EU2020 Index, 2012	Employment rate, aged 20-64, 2012	Early school leavers aged 18-24, 2011-2013	Tertiary education aged 30-34, 2011-2013	At-risk-of-poverty-or-social-exclusion rate, 2012
Cohesion Countries	48	64%	10%	31%	30%
Cities	66	66%	6%	44%	26%
Towns, suburbs and rural areas	32	63%	12%	22%	32%
Non-Cohesion Countries	76	70%	14%	38%	23%
Cities	74	69%	13%	44%	24%
Towns, suburbs and rural areas	74	71%	14%	31%	22%
EU-28	69	68%	13%	36%	25%
Cities	73	68%	12%	44%	24%
Towns, suburbs and rural areas	62	69%	14%	27%	25%

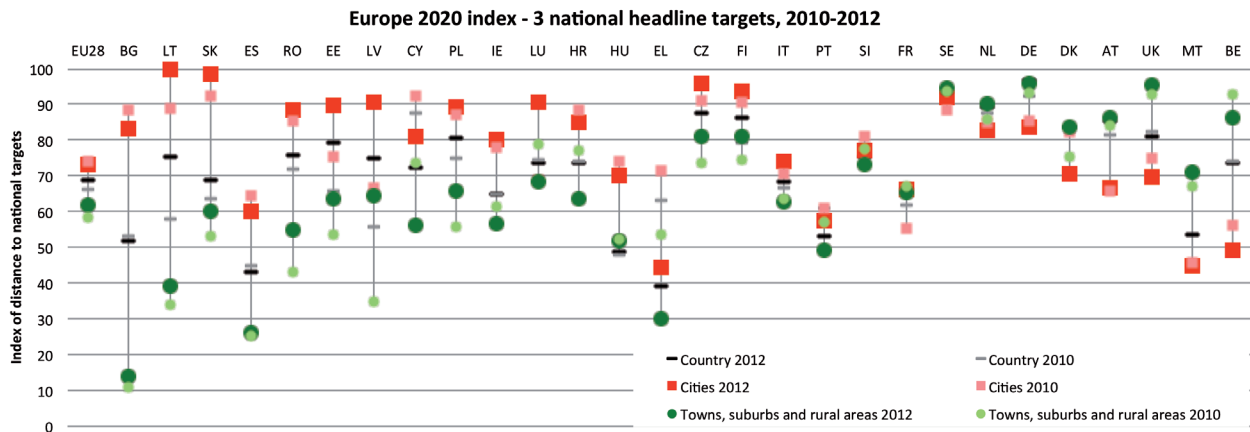
Finally, Figure 5 shows that the scores have changed substantially between 2010 and 2012 in several Member States. In some countries both the scores of the cities and of the areas outside cities improved, for example in Estonia, Poland and Slovakia. In others, the situation deteriorated in both types of area, as in Greece, Cyprus, Denmark and Belgium. Finally, in some only one type of area was affected, for example cities improved in Lithuania and the Czech Republic, but their areas outside cities barely changed. In the UK, the polarisation grew with cities performing even worse, while areas outside cities improved their score even further.

9 Please note that in some cases, cities and towns, suburbs and rural areas can score below the national level. This is because scores beyond the target are not taken into account. As a result, if a country just reaches the employment and education target and its cities score well above the education target, but below the employment target (and vice versa for areas outside cities), both the cities and the towns, suburbs and rural areas can have a score below the national average.

10 Bulgaria, Cyprus, Czech Republic, Estonia, Greece, Croatia, Latvia, Lithuania, Hungary, Malta, Poland, Portugal, Romania, Slovenia, Slovakia.

FIGURE 6: The Europe 2020 index by DEGURBA under national targets. 100 = meets or exceeds all targets, 0 = very far removed from all targets

Source: Authors' calculations based on Eurostat and EEA data



As with the other two indices, the relative performance of the countries changes when we shift to the national targets. Romania scored 20 relative to the EU targets, but 76 relative to its national targets.

Also the city scores change. For example, the cities in Sweden, Finland and the Netherlands no longer obtain a perfect score as these MS have set themselves targets above the EU targets. The cities in Lithuania, which already scored well relative to the EU targets, now obtain a perfect score. Nevertheless, the pattern of large differences between cities and areas outside cities in Cohesion countries and small differences or worse performance of cities in Cohesion countries remains. The changes over time also follow the same pattern.

Conclusion

This regional focus presented three indices of the distance to the EU and the national target for EU Member States, regions and cities. The national level indicator is useful to monitor progress in the five headline targets. It shows that the Nordic Member States have (almost) reached all the EU targets. The Baltic Member States have made the most progress to national and EU targets. Portugal, Greece and Cyprus still felt a big impact of the crisis with a deterioration of their score in the period 2010-2012 and Spain's score also dropped. The big challenges remain reducing poverty and increasing employment and innovation, while maintaining the positive trends on education, climate change and renewable energy.

The national level index, however, does not show the variation of the performance within a country, which is why we created a regional and a cities index.

The regional index shows that the performance within a single Member State relative to the four headline targets can vary widely. The variation of the performance of the Belgian regions is almost as big as the variation between all Member States. In most countries, the capital region outperforms the other regions and in several cases the gap between the capital region and the second best is wide, especially in central and eastern Member States.

The 2020 index in more developed regions is double that of the less developed regions. This stark difference is fuelled by big gaps in employment, tertiary education and R&D. The transition regions occupy an intermediate position. This underlines that the EU will not be able to reach the 2020 targets without a significant progress, and catching up, in the less developed regions and a better performance of the transition regions.

The analysis by degree of urbanisation shows that cities in the Cohesion countries are much closer to achieving the three headline targets than their towns, suburbs and rural areas. The gap between these two types of areas in Lithuania is the equivalent to the gap between Romania and Germany.

In several non-Cohesion countries, such as Germany, Denmark, the UK and Belgium, cities scored low in 2010 and did even worse in 2012. As cities account for a large share of their population, these Member States will not be able to reach the 2020 targets without a better city performance.

The indices at the regional level and by degree of urbanisation both show huge performance gaps within a single Member State. To efficiently address these gaps, national level policies, i.e. spatially-blind policies, will not be sufficient. These gaps suggest that some policies should be adapted to the specific situation of a region or a city, i.e. a place-based policy, to allow these places to contribute more to reaching the 2020 targets.

Acknowledgements

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Annex

Europe 2020 is a ten-year economic strategy introduced by the European Commission in March 2010.¹¹ Its stated aim is to promote smart, sustainable, and inclusive growth. Europe 2020 identifies eight headline targets to be attained by the end of 2020, involving (a) employment; (b) research and development; (c) climate/energy; (d) education; and (e) social inclusion and poverty reduction.

The following table summarises these broad headline targets for the entire EU, along with the specific (sub)targets they entail. Each target/subtarget is abbreviated by the acronym appearing in parentheses.

TABLE 4: Europe 2020 EU-wide headline targets. Note that national GHG targets refer to non-ETS GHG compared to the Effort Sharing Decision base year.

1. Employment
a) 75% of the 20-64-year-olds to be employed (EMP)
2. Innovation
a) 3% of the EU's GDP to be invested in R&D (R&D)
3. Climate change and energy sustainability ¹²
a) greenhouse gas emissions 20% (or even 30%, if the conditions are right) lower than 1990 (GHG)
b) 20% of energy from renewables (REN)
c) 20% increase in energy efficiency compared to 2005 (EFF)
4. Education
a) Reducing the rates of early school leaving below 10% (ESL)
b) at least 40% of 30-34-year-olds completing third level education (TERT)
5. Fighting poverty and social exclusion
a) at least 20 million fewer people in or at risk of poverty and social exclusion (AROPE)

11 <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:2020:FIN:EN:PDF>

12 Energy efficiency has not been translated into a measurable target. It has therefore not been included in this analysis.

Target availability and imputation

As mentioned earlier, national targets have also been determined in addition to the EU-wide ones. These national targets translate European-wide goals to levels that are realistically attainable for individual countries. Such adjustments are necessary, given the intrinsic heterogeneity of the EU. The figures for EMP, R&D, ESL, and TERT were directly obtained from Eurostat. Eurostat does not list national targets for GHG since national commitments on these indicators involve just emissions not covered by the EU Emissions Trading System (EU ETS), which are not distinguished in Eurostat statistics. The situation is less clear for EFF where some national targets are listed on a pdf file^[13] that can be downloaded from the Commission's Europe 2020 website, but no national targets of any sort are listed in Eurostat or other Commission webpages or sources. We suppose this is because the EFF target has largely been considered symbolic, as it is not easily measurable. For this reason, we do not consider the EFF target in the index we construct, not even at national level.

Table 3 lists the national Europe 2020 targets. When national targets for a particular country-indicator pair were not available (7 such pairs were unavailable), a reasonable estimate, based on the national targets of countries with roughly similar 'starting points', was derived. Let us illustrate this approach with an example based on the UK's missing TERT target. In 2009 the UK had a TERT of 41.5, which was similar to that of DK (40.7), NL (40.5), LT (40.6), PT (41.2), FR (43.2), and CY (43.9). TERT targets for the latter countries were available, so we went ahead and computed the average of the distances of their 2009 TERT values to their corresponding targets^[14], which was equal to 1.4. To impute the UK target, we added to its 2009 value this average distance to target, resulting in a target of $41.5 + 1.4 = 42.9$. Following the above procedure, we imputed all of the UK's targets (except for GHG and REN which are available), as well as the Czech Republic's R&D target and Sweden's AROPE target.

Special mention needs to be made with regard to the AROPE headline target. AROPE national targets involve numerical goals regarding the reduction of the total number of people at risk of poverty or social exclusion. However, given that the effort to reduce the number of people at risk should be seen in light of the total population of country and its share of population at risk, we transformed the national AROPE Europe 2020 targets into population percentages using reference year national data on total population and the number of people AROPE, and the Europe 2020 target reduction. The first two types of data we obtained from Eurostat, while the third by visiting each country's individual webpage at the Europe 2020 Commission website.^[15] The aforementioned imputation of Sweden's AROPE was performed on the basis of these transformed figures.

Finally, it should be noted that Germany, France, and Austria have idiosyncratic TERT targets, reflecting the unique characteristics of their education systems. These were taken into account when considering the versions of the index with national targets in the case of France and Germany. Unfortunately, we were not able to find data on the Austrian TERT target.

TABLE 5: Europe 2020 headline national targets. Imputed targets in red. AROPE percentage targets derived from absolute targets. Note that national GHG targets refer to non-ETS GHGs compared to the Effort Sharing Decision base year (2005).

* = including ISCED 4, ** = including ISCED 4/4a, *** = 17–33 year olds.

Country	EMP	R&D	ESL	TERT	AROPE	REN	GHG
EU-28	75	3	10	40	19.5	20	90
AT	77	3.76	9.5	38**	17.6	34	84
BE	73.2	3	9.5	47	17.0	13	85
BG	76	1.5	11	36	42.0	16	120
CY	75	0.5	10	46	19.8	13	95
CZ	75	2.35	5.2	32	14.9	13	109
DE	75	3	9.9	42*	19.5	18	86
DK	80	3	9.9	40	15.8	30	80
EE	76	3	9.5	40	18.0	25	111
EL	70	0.67	9.7	32	23.2	18	96
ES	74	3	15	44	21.3	20	90
FI	78	4	8	42	14.3	38	84
FR	75	3	9.5	50***	15.0	23	86
HR	59	1.4	4	35	28.8	20	111

13 Found at: http://ec.europa.eu/europe2020/pdf/targets_en.pdf

14 Where this distance was negative (as in the case of DK and NL), meaning that a country had already attained its target in 2009, we truncated it to 0.

15 http://ec.europa.eu/europe2020/europe-2020-in-your-country/index_en.htm

Country	EMP	R&D	ESL	TERT	AROPE	REN	GHG
HU	75	1.8	10	30.3	23.3	14.65	110
IE	67	2	15	26	22.7	16	80
IT	67	1.53	15	26	22.0	17	87
LT	72	1.9	8.9	40	23.6	23	115
LU	73	2.3	9.9	40	13.6	11	80
LV	73	1.5	13.4	34	28.2	40	117
MT	62.9	0.67	29	33	18.3	10	105
NL	80	2.5	7.9	40	14.2	14	84
PL	71	1.7	4.5	45	26.2	15	114
PT	75	2.7	10	40	24.2	31	101
RO	70	2	11.3	26.7	42.8	24	119
SE	80	4	9.9	40	13.8	49	83
SI	75	3	5.0	40	16.0	25	104
SK	72	1	6.0	40	17.5	14	113
UK	77.1	2.87	12.3	42.9	19.5	15	84

Data availability and imputation

At national level there is data on all indicators except EFF. Moreover, the GHG indicator tracks Effort Sharing Decision on non-ETS greenhouse gases.

Let us now consider each indicator's data availability at NUTS 2 and DEGURBA level. First, we note that there is no data for any of the climate change and energy sustainability indicators. In what follows, we list all remaining indicators and their availability:

- EMP. This indicator has 100% NUTS 2 and DEGURBA coverage.
- R&D. 2010 data were unavailable for Austria, Germany, Greece and the Netherlands; thus, we used 2009 data instead, except for Greece for which we used 2011 data. Conversely, 2012 data were unavailable for all NUTS 2 regions so we proxied them with 2011 data. R&D data are not available by DEGURBA. 2010-2012 data for the Niederbayern (DE22), Oberpfalz (DE23) were consistently unavailable due to privacy concerns.
- ESL and TERT. NUTS 2 and DEGURBA education data for all years are widely available with very few exceptions.
- AROPE. NUTS 2 coverage is very low (around 40%), since many countries do not yet report regional poverty statistics. Indeed, Germany, France, Portugal, and the United Kingdom report only national data, while Belgium, Greece, the Netherlands, and Hungary just report national and NUTS 1 data. We used these data to extrapolate NUTS 2 missing data.

Data conventions, normalisation, aggregation, & weighting

When constructing the Europe 2020 index, we adopted the following general scheme:

TABLE 6: Construction of Europe 2020 index for a year X. The index (i) at NUTS 2 level uses EMP, R&D, ESL, TERT and AROPE, (ii) by DEGURBA EMP, ESL, TERT, AROPE and (iii) at national level all 7 indicators.

	Year	Example
Europe 2020 Index	X	2012
EMP	X	2012
R&D	X	2012
ESL	Average of (X-1)-X-(X+1)	Average of 2011, 2012, 2013
TERT	Average of (X-1)-X-(X+1)	Average of 2011, 2012, 2013
AROPE	X+1	2013
REN	X	2012
GHG	X	2012

The three-year moving average for ESL and TERT was pursued in light of many regions' small sample sizes for these indicators because these indicators are based on the labour force survey.

We use the AROPE figures published for the year X+1 for index of year X because two out of the three components of the AROPE actually refer to the previous calendar year. AROPE includes people who are (1) at-risk-of-poverty and/or (2) living in a household with very low work intensity and/or (3) severely materially deprived. The first two aspects are measured for the previous calendar year in almost all MS. This approach ensures that the employment figures and the very-low-work-intensity both refer to the same reference year.

The aggregation methodology is broadly similar to that used in previous versions of the Europe 2020 Regional Index (Athanasoglou and Dijkstra, 2014).¹⁶ A region's progress towards meeting an individual goal is measured via the normalised distance of its actual performance with respect to the relevant EU28 or national target.

In the version of the Index we present in this report, the normalisation of distances to target was done by considering the 95th percentile of such distances over the years 2010, 2011, and 2012 for each different version of the Index (national/NUTS2/DEGURBA combined with national/EU28 targets). Hence, three different normalisations are performed: one for each level of spatial analysis (national, NUTS 2, DEGURBA). This ensures comparability over time for pairs of indices sharing the same spatial scale. Moreover, it allows us to clearly identify the effect on Europe 2020 performance of using EU versus national targets.

With the data appropriately normalised, index scores calculated via a weighted arithmetic average of the normalised distances over the set of all indicators.¹⁷ Where applicable, equal weight is granted to the available headline targets of the index. Thus, this means that the index at NUTS 2 level grants weight 0.25 to EMP, R&D, and AROPE and 0.125 to ESL and TERT. Correspondingly, the index at national level assigns weight 0.2 to EMP, R&D, AROPE, and 0.1 to ESL, TERT, REN, and GHG, while the index by DEGURBA grants weight 1/3 to EMP and AROPE and 1/6 to ESL and TERT.

¹⁶ The document may be downloaded at <http://publications.jrc.ec.europa.eu/repository/handle/JRC90238>

¹⁷ An important note about Germany and France is in order regarding their TERT scores. As mentioned earlier, these two countries had different kinds of national targets regarding higher education (DE: percentage of 30-34 with ISCED4; FR: percentage of population of ages 17-33 with tertiary education). To respect this fact, the versions of the indices with national targets considered the corresponding German and French data when calculating distances from TERT targets.

