EUROPEAN
COMMISSION

Brussels, 10.4.2017
SWD(2017) 132 final

COMMISSION STAFF WORKING DOCUMENT

Competitiveness in low-income and low-growth regions
The lagging regions report

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Executive summary

The Commissioner for Regional Policy, Corina Creţu, launched in June 2015 an initiative to examine the factors that hold back growth and investment in the low-income and low-growth regions of the EU (the lagging regions). Identifying critical development aspects would help suggest possible solutions to boost growth and increase income in those regions.

Therefore this report analyses the investment needs, growth determinants, macro-economic framework and need for structural reforms. Moreover, it already presents concrete ideas to address the obstacles to growth in the pilot regions of Poland and Romania. In so doing, the report shows why we need a strong commitment in Cohesion Policy: to help Europe's regions improve their citizens' daily life.

MAIN FINDINGS

The report identifies five main reasons as to why some regions have not yet reached the expected rate of growth and income.

- **The macroeconomic framework has a significant impact on regional economic growth.** Macroeconomic imbalances caused by the crisis show that the lack of adequate development policies risks jeopardizing two decades of effort towards EU cohesion, interrupting the long-run convergence process and wiping out most of the earlier economic advances. Low-growth regions are affected by a combination of stagnating productivity and rising labour cost, which in turn reduced their export shares. In the low-income regions, however, lower public and private debt levels meant that higher investment rates could be maintained: the combination of productivity growth and more moderate increases in labour costs boosted their exports and smoothed their economic adjustment. The higher levels of public and private debt in low-growth countries reduced the capacity of banks to provide loans, which limited investments in low-growth regions and thus their capacity to grow.
- **Lagging regions have lower productivity, educational attainment and employment rates** compared to the other regions in their country. Evidence shows also that they score poorly on labour market and business dynamism indicators. As a result, labour market rigidities and a poor business environment have higher impact on these regions, but their potential gains from reforms are also bigger. Many aspects of the business environment show wide variation within the same common national framework: companies and residents can face big differences in time, number of procedures and costs needed to deal with local and regional administrations and judiciary system.
- **Underdeveloped regional innovation systems, skills gap and poor institutional quality undermine the growth potential of lagging regions.** Innovation lacks efficient interactions between higher education institutions and the productive sector. Lack of human capital and poor institutional quality hampers competitiveness and investment decisions. Low-income regions still have significant gaps in their infrastructure, while low-growths need well targeted investment to improve accessibility.
- **The significant population losses in low-income regions and especially the out-migration of the younger and more educated population may limit their growth prospects.** All low-income regions lost population since 2000 (in some regions by more than 20%) primarily due to net migration which was negative in all these regions. This meant an out-migration of young qualified workers and to a limited capacity to attract talent from other regions,

which is likely to limit their growth prospects. The low-growth regions varied in performance: some had a growing population, others lost some population.

- **Public and private investment dropped in these regions**, especially in low-growth regions. Investments in low-income regions, driven by industry and tradable services, increased total factor productivity and helped rebalance the trade deficit. In low-growth regions, investments were driven by the real estate sector, which lead to less productivity growth. Accounting for a growing share of public investment, Cohesion Policy has played an important role in restoring economic growth. High public debt reduced the margins of budgetary policies. Automatic stabilisers meant that governments increased expenditure, which they compensated by reducing public investment (including national co-financing of Cohesion Policy).

PROPOSED SOLUTIONS

The report proposes several recommendations to overcome the development barriers and to enhance competitiveness of low-growth and low-income regions.

- **Strive to overcome the main obstacles which limit growth by virtue of smart specialisation strategies.** Underdeveloped regional innovation systems should improve interactions among businesses and between businesses (productive sector) and higher education institutions. Innovation can be boosted by integrating education, research and innovation, learning from successfully established Knowledge-Triangle networks.
- **Reduce gaps in infrastructure and invest in education to attract and keep high quality human resources.** Low-income regions still have significant gaps in their infrastructure. Reducing these gaps, e.g. improving the road network and completing the Trans-European Network, in combination with investments in human capital, skills and innovation, will improve their competitiveness. In particular, attention needs to be paid to the insertion of university graduates into the labour market, avoiding common problems of mismatch between educational supply and labour demand. It will be also crucial to incentivise lifelong learning as simply relying on the skills acquired in formal education would lead to a quick depreciation of skills and to the lack of adaptation to new challenges and competition.
- **Link cities better to the surrounding areas.** Lagging regions are not purely rural and they continue to urbanise either through faster population growth in cities in low-growth regions and through population reductions outside cities in low-income regions. Generating more spill overs from these successful cities (which function as economic engines) would be beneficial.
- **Invest in quality of institutions and regional administrative capacity**. Cohesion Policy also supports programmes to strengthen institutional capacity and improve the efficiency of public administrations: these programmes should continue to include actions to increase the efficiency, transparency and accountability of public services, promote e-government, reduce regulatory red tape, modernise public procurement, support anti-corruption measures and support judicial reform.
- **Strengthen the link between the European Semester and Cohesion Policy including by identifying the necessary conditions for investment** (conditionalities). The experience of the low-growth and low-income regions provides further evidence that investment policies can only deliver full results in the environment that is conducive to growth and investment. Unfavourable macroeconomic and structural conditions can undermine the effectiveness of investments and the benefits they can bring to the citizens.

CONCLUSIONS

Cohesion Policy plays an important role in all lagging regions and accounts for a very high share of their public investment in most of them. The ex-post evaluations of the period 2007-2013 have shown the many positive impacts of Cohesion Policy on small and medium-sized enterprises, skills, transport, social infrastructure, energy efficiency and the environment.

Moving to the next level of economic development cannot be accomplished by a one-size-fits-all policy, but will require regionally differentiated investments and policy responses.

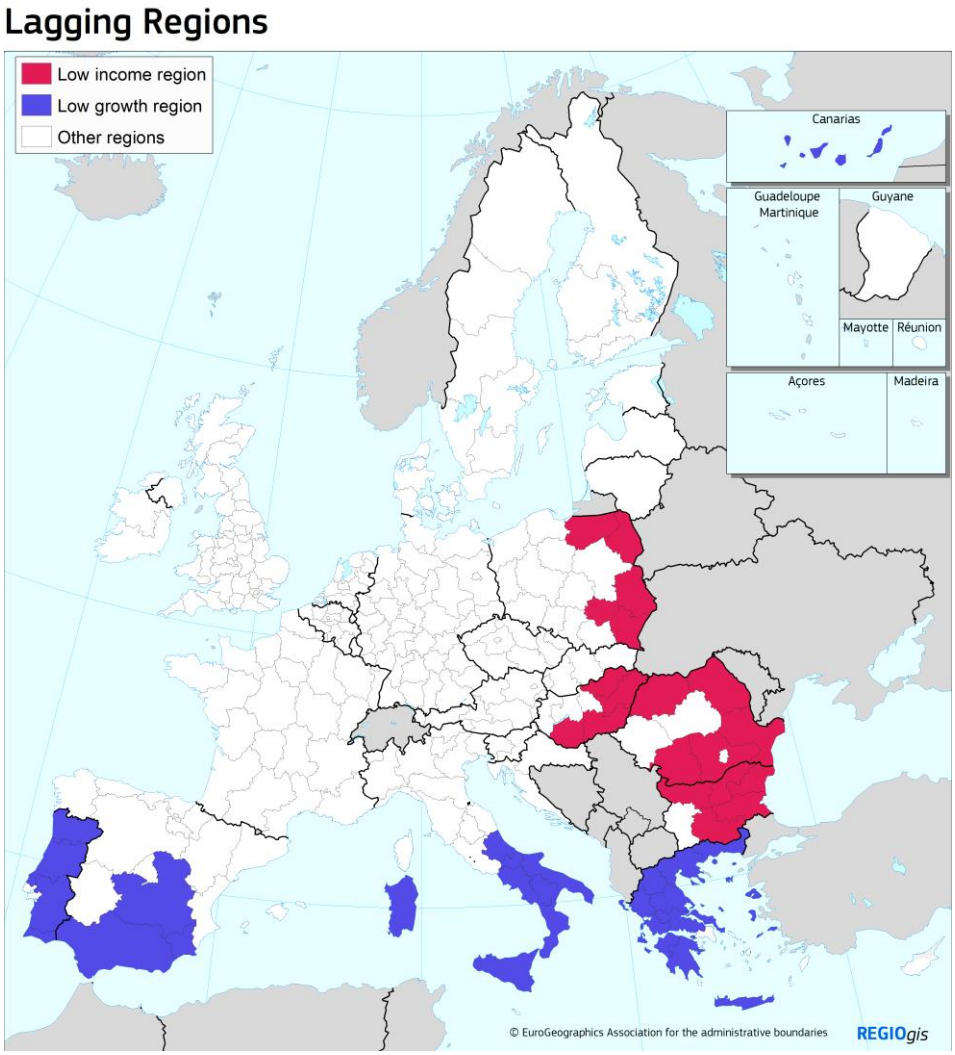
It is clear that comprehensive and well-timed development strategies are therefore needed not only to address some of the basic problems of lagging regions, but also to enhance their capacity – and, as a consequence, that of the entire Union – to adopt new technology, retain and attract talent, generate and stimulate new investments, and, last but not least, make the most of the economic potential across all of the EU.

1 Main characteristics of lagging regions

This report focuses on 47 lagging regions in eight Member States[1]. For analytical purposes, the two types of lagging regions have been defined as follows:

- 'Low-growth regions' cover less developed and transition regions (regions with GDP per capita up to 90% of EU average) that did not converge to the EU average between the years 2000 and 2013 in Member States with a GDP per head in PPS below the EU average in 2013. This means almost all the less developed and transition regions in Greece, Spain, Italy and Portugal.
- 'Low-income regions' cover all regions with a GDP per head in PPS below 50% of the EU average in 2013. This group covers several less developed regions in Bulgaria, Hungary, Poland and Romania.

Map 1-1 Low-growth and low-income regions



[1] List of analysed regions is in the annex. Mayotte has not been included in this report due to lacking data. The regions have been selected at the launch of the initiative in 2015 on the basis of the data available back then. The report covers essentially period 2000-2013, with update of data to 2014 or 2015 where possible. The report does not analyse the sector of agriculture.

Around one in six EU residents live in a lagging region (83 million inhabitants) of which 32 million live in low-income regions and 51 million in low-growth regions.

Both types of regions score well below the EU average in terms of employment rates, R&D as a share of GDP, quality of government and accessibility (
Table 1-1). Unemployment rates, however, are much higher in low-growth regions (22% vs 9%), although there may be some hidden unemployment in low-income regions because subsistence farming is counted as being in employment. Low-income regions have a much smaller share of people with a low educational attainment (22% vs 49%). Low-income regions, however, score worse on life expectancy, competitiveness and social progress.

Table 1-1 Basic indicators in low-income and low-growth regions

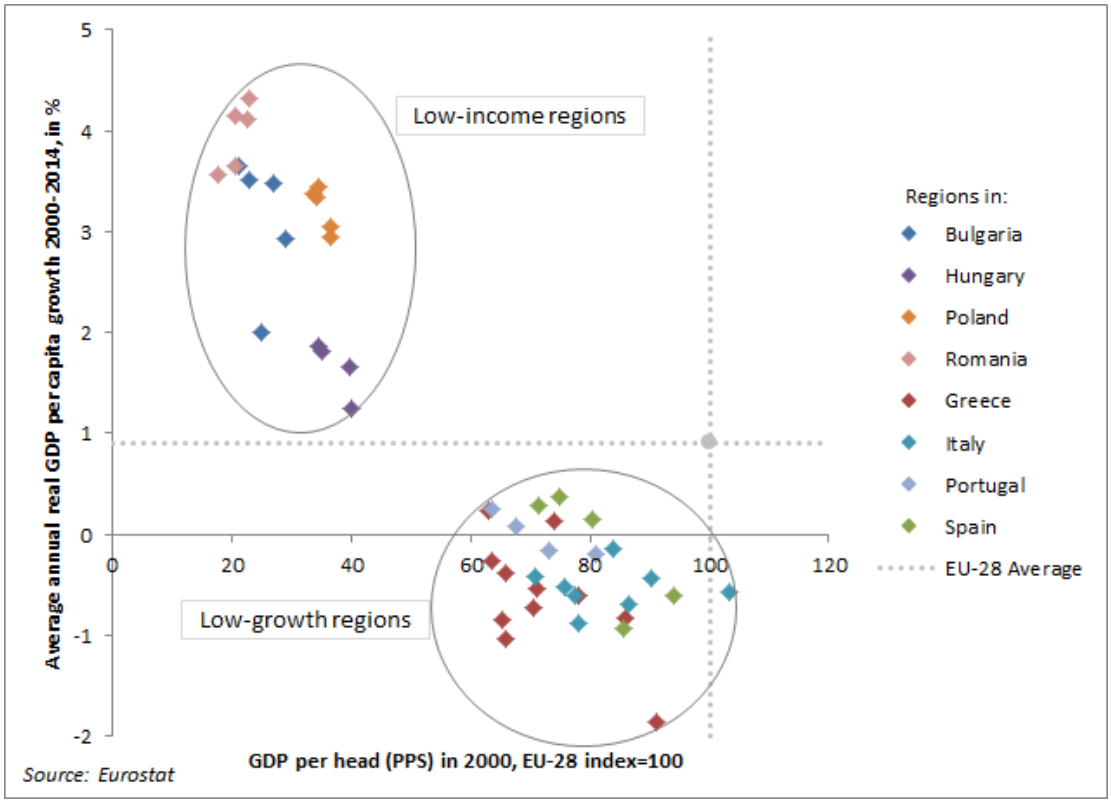
Indicator	Year	Low-income regions	Low-growth regions	EU-28
Employment rate 20-64 in %	2015	66	53	70
Unemployment rate in %	2015	9	22	9
Low educational attainment of people aged 25-64, in %	2015	22	49	24
Tertiary education attainment of people aged 25-64, in %	2015	19	21	30
R&D as a % of GDP	2015	0.5	0.9	2
Employment in agriculture as share of total employment, in %	2013	25	13	5
Change in agricultural employment share, in percentage points	2000-2013	-10	-3	-3
Life expectancy at birth, in years	2014	76	82	81
Quality of Government index (0-100)	2013	29	34	49
Regional competitiveness index (0-100)	2016	15	22	55
Social Progress index (0-100)	2016	49	58	66

Source: Eurostat, except RCI and SPI DG REGIO, QoG University of Gothenburg.
Low education attainment means levels ISCED 0-2.

Low-income regions are still much less developed than low-growth regions (see Figure 1-1). In 2014, GDP per head in the low-income regions was 43% of the EU average (in PPS) compared to 65% for the low-growth regions. However, growth in the low-income regions was much higher than in the low-growth regions. Since 2000 real GDP per head has more than doubled in the low-income regions (+113%), while in the low-growth regions it increased only by 17%. As a result, the gap between the two groups of regions has decreased rapidly. In 2000, GDP per head in low-growth regions was almost three times that of low-income regions. In 2014, it was only 50% higher.

To understand the mechanisms behind the wide variations in the performance of the two groups of regions, real GDP per head growth can be split into two components, productivity growth and changes employment relative to population.

Figure 1-1 GDP growth and GDP per head in lagging regions, 2000-2014



Productivity growth captures technological progress and the functioning of goods, services, labour and financial markets. In developed countries, it is the main engine of long-term growth. In regions with low employment rates, however, employment growth can also contribute to growth.

Between 2000 and 2013, most of the Polish and Bulgarian low-income regions succeeded in boosting both productivity and employment (as shown in quadrant I of Figure 1-2) indicating that the regions moved away from low productive agricultural jobs towards more technology and/or capital-intensive activities. By enhancing their productivity, these economies gained a large market share and increased employment, despite the impact of the economic crisis which hit the EU in 2009.

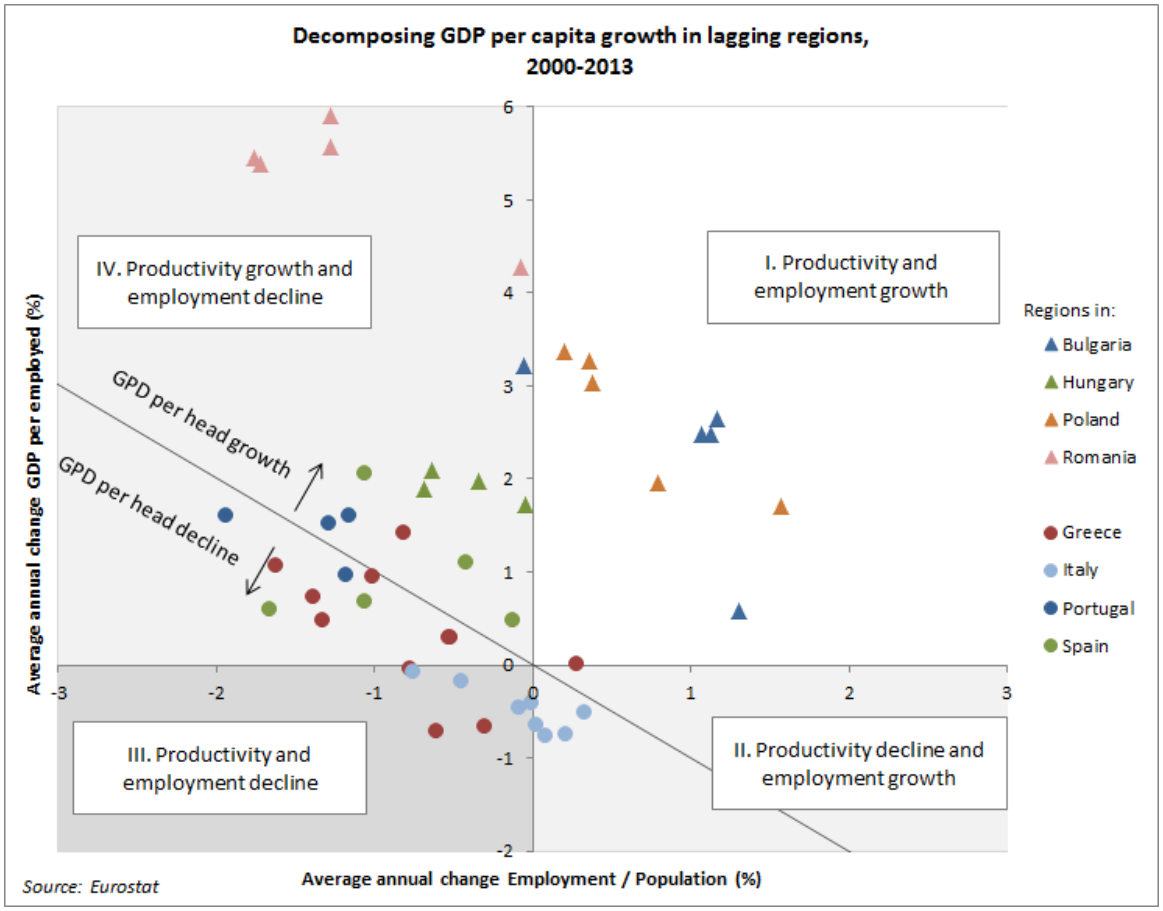
The low-income regions of Hungary and Romania, on the other hand, increased their productivity, but shed labour (as shown in quadrant II of Figure 1-2). Their productivity growth was high enough to compensate for the loss in employment, which meant that GDP still grew.

Twenty of the 27 low-growth regions experienced a decline in real GDP per head between 2000 and 2013 (located below the diagonal on Figure 1-2), 23 a decline of employment relative to population (left of the vertical axis) and 11 a decline of productivity (below the horizontal axis).

Prior to the crisis, employment grew in the Italian and Spanish low-growth regions but with very little productivity growth. This is typical of a situation where employment is created in less productive activities and sectors, which rely on low-skilled labour (and pay low wages). Post 2008, employment fell sharply in both countries. Portugal experienced a jobless growth process before 2008 where increases in labour productivity compensated employment reductions. But after 2008, employment dropped too fast to be compensated by productivity growth leading to a GDP per head decline. Greece experienced aggregate productivity and employment increases before

the crisis, which both declined rapidly and persistently afterwards. Housing bubbles and an unsustainable boom in construction led to a collapse in housing prices and the construction sector in Greece and Spain, underlining the unsustainable nature of their pre-crisis growth.

Figure 1-2 Productivity and employment changes in lagging regions, 2000-2013



The analysis reveals two different development patterns between the low-income and the low-growth regions. In the low-income regions, a rapid restructuring brought strong growth in GDP and productivity growth, albeit with some employment losses in Romania and Hungary. The low-growth regions, on the other hand, did not become much more productive, and the jobs which had been initially created were quickly lost during the crisis.

2 The macroeconomic framework and regional growth and investment

The European Commission has developed a scoreboard to identify macroeconomic imbalances[2] at national level in the Member States, which has been approved by the Council and Parliament. These imbalances do not have the same impact in all regions. For example, rapidly increasing unit labour costs may undermine the economic growth of regions with a high export share. High levels of public and private debt can lead to higher interest rates and reduce the capacity of the banks to provide loans, which will limit investment in particular in less productive and thus more risky locations and regions. Recent research found that macroeconomic stability, in particular levels of external and government debt, is crucial for regional growth (Annoni, Catalina-Rubianes 2016). Macroeconomic environment differed significantly between low-growth and low-income countries[3].

Table 2-1 Economic performance of countries with lagging regions

Economic performance	Low-income countries	Low-growth countries
Public debt, 2013	18%-77% GDP	90%-175% GDP
Interest paid on debt, 2013	2.5% GDP	4.2% GDP
Public investment, 2013*	4.3% GDP (increase by 8%)	2.5% GDP (decrease by 43%)
Private debt, 2013	60% - 125% of GDP	120%-190% of GDP
Total investment, 2005-2015 (2005=100)	155,9	73,0
Share of world's exports, 2001-2015	Significant increase in exports (from 0,2 to 0,54)	Strong contraction of exports (from 2,11 to 1,3)

Source: Eurostat. National level data. *Public investment change over 2007-2013/14.

Overall low-growth countries recorded a substantially higher **public debt** relative to GDP than low-income countries. It ranged between 90% (ES) and 175% (EL) of GDP in the former group as compared to between 18% (BG) and 77% (HU) in the latter group. As a result, in 2013 the low-growth countries needed 4.2% of GDP to pay the interest on this debt compared to only 2.5% in the low-income countries.

Both groups were mostly running **current account deficits** which in part reflect their trade deficits in goods and services. However, the low-growth countries experienced a strong contraction of the value of their exports in goods and services, while the low-income countries increased it significantly. Low-growth countries also scored worse in attracting FDI with a flow around half the size relative to GDP compared to the low-income countries[4].

Due to persistent current accounts deficits and net borrowing Greece, Spain and Portugal experienced growing **indebtedness** of their economy, which affected both the private and the public sector. Concerns regarding the debt sustainability of the public sector led to an interruption of external financing in some Member States, with a dramatic disruptive effect for the whole economy. This has led to a significant economic adjustment process over the last years resulting in current account surpluses which need to be maintained to reduce indebtedness.

[2] Indicators in the macroeconomic imbalances procedure relate to the national level data. As the availability of MIP indicators at regional level is limited, national data is used unless specifically marked in the text.

[3] The report uses terms 'low-growth countries' for countries with low-growth regions, 'low-income countries' for countries with low-income regions (as they are defined for the purpose of this report).

[4] Between 1999 and 2013 countries with low income regions attracted FDI of 42% of their GDP, while countries with low growth regions ca 24%. Source: Eurostat.

Another major difference between the two groups was the level of **public investment**. Public investment was 4.3% of GDP in 2013 in the low-income countries, while it was only 2.5% in the low-growth countries.

Private investment also declined in the low-growth countries since the crisis, while it remained stable in the low-income countries. The decline in some low-growth countries was concentrated in their lagging regions. In Italy, for example, the decline was significantly higher in the Southern regions compared to the rest of the country.

Between 2007 and 2015, **total investment** declined by 9% overall in the EU, but by 33% in the low-growth countries with Greece faced the biggest decline of more than 60%.

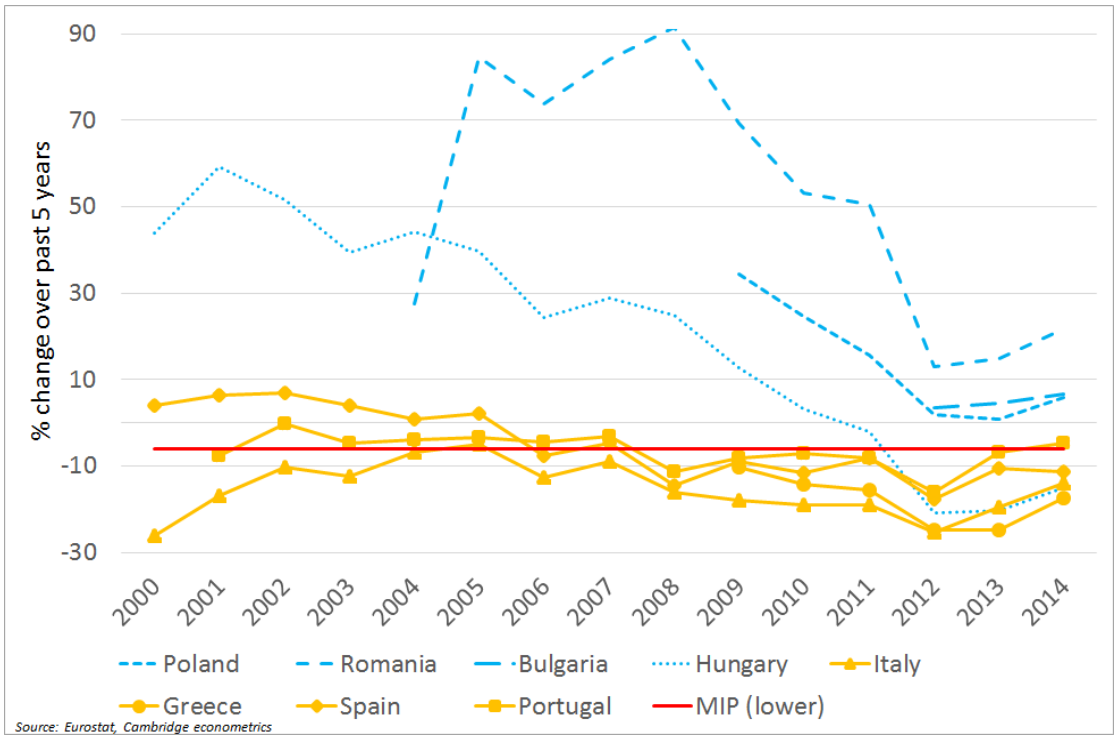
The **capital stock** in both groups of countries steadily converged to the EU average before the crisis, but the economic downturn has halted this process in the low-growth countries which may reduce their long-term growth potential.

The growth potential of an economy can also been strengthened by improvements in **total factor productivity** (TFP), which incorporates factors other than capital and labour. The low-income countries have improved their TFP, while there were only limited gains in the low-growth countries. In fact, TFP in the low-growth countries was a concern before the crisis and has worsened since.

2.1 Growing trade deficits in countries with lagging regions prior to crisis

Before the crisis the countries with lagging regions had persistent trade deficits, which peaked at -5% of GDP in 2008.

Figure 2-1 Export Market shares, 2000-2014



These trade deficits were fuelled by rapidly increasing domestic consumption, accounting for a significant share of their economic growth. At the same time, the low-growth countries started to lose export market shares, which further contributed to the growing trade deficits.

Following the crisis, trade deficits dropped due to a contraction of the domestic demand and growing exports. This was particularly tough for those regions relying more on domestic demand. Low-growth countries were not able to adjust as quickly as the low-income and continued to run trade deficits and increased net external borrowing until 2011. As of 2012, the low-growth countries had a trade surplus as well, which is an important condition to reduce the level of indebtedness and sign that the adjustment of the economy towards balanced economic growth is on-going.

Persistent trade deficits can reflect a structural problem of competitiveness. The low-growth countries tended to see their export shares fall since the early 2000s, indicating a loss in competitiveness. The low-income countries have maintained export share growth, with the exception of Hungary (Figure 2-1), but the growth rate has slowed.

As regards unit labour costs, the main indicator of cost-competitiveness of the scoreboard, it has increased in both low-growth and low-income countries compared to the rest of the European Union. The difference is that the increases in the low-growth countries were accompanied by a gradual deterioration in their Total Factor Productivity (TFP), which thus eroded their competitive position. This was not the case of low-income countries, which have displayed a remarkable improvement of their TFP.[5]

2.1.1 A regional lens on unit labour costs

Since the economic crisis, the monitoring of macroeconomic imbalances has been reinforced, but this typically does not consider the regional dimension. Changes in unit labour costs, an important imbalance indicator, capture the growth in the cost of labour that employers incur per unit of output (personnel costs divided by productivity). If unit labour costs grow significantly, it tends to reduce the competitiveness of export-oriented sectors because it increases the cost of production.

Regional differences in unit labour costs can reveal when the national changes in unit labour costs hide substantially variation within a country. For example, the gap in productivity between regions in OECD countries remained stable over the 1995-2013 period, while differences across countries diminished (OECD, 2016). Depending on their economic structure, some regions may be more sensitive to changes in unit labour costs. For example, regions with a dominant knowledge-intensive service sector may be less sensitive to cost-competitiveness than those with more low-tech production, such as textile manufacturing. This is evident in Portugal where exports in Lisbon were relatively unaffected by changes in unit labour costs, whereas in the low-growth regions exports dropped strongly when unit labour costs grew quickly.

A comparison of the performance of 180 NUTS-2 regions between 2000 and 2013 shows that rising unit labour costs have a different impact on regions. When unit labour costs in a region grew by more than 1 percentage point faster than the cost in the country, it lost 0.3 percentage points growth in gross value added per capita and 0.4 percentage points in exports per capita. This effect was even stronger prior to the crisis.

Slow productivity growth is holding back low-income regions

Unit labour costs follow different patterns in the tradable and the non-tradable sector. In the Bulgarian, Polish and Romanian low-income regions, unit labour costs in the tradable sectors are higher than in the other regions in the same country (Lembcke and Wolf, mimeo), which makes the low-income regions less attractive for firms in these sectors. Over the 2000-2013 period, tradable unit labour costs were consistently higher in low-income regions. In the low-income regions, growth in tradable sector productivity and personnel costs both lagged that in the other regions in the same country. Only the Polish low-income regions matched the tradable productivity growth of other parts of the country.

[5] Between 2000 and 2015, the total factor productivity (TFP) in low growth countries stagnated. In countries with low income regions TFP improved by ca 20% (but mainly before 2008). Source: Ameco database.

In low-income regions, muted growth in personnel costs kept unit labour costs in check, with personnel costs in the non-tradable sectors closely following those in the tradable sectors. Economic theory suggests that if workers are able to use their skills in different sectors, wages in tradable and non-tradable sectors need to be equal to ensure that both sectors can recruit staff. The wage that firms can pay depends on the price for their products and the productivity of the worker. Since firms in tradable sectors are competing internationally, prices for their products need to follow their competitors and thus should limit wages increases to the increase in productivity. Firms in non-tradable sectors are only competing locally and can therefore adjust prices. Through adjusting prices, non-tradable sector firms can match wages that are paid in tradable sectors, even if workers are less productive in non-tradable sectors.

Low-growth regions' tradable sectors suffer due to high personnel costs in non-tradable sectors

All four countries with low-growth regions exceeded the MIP threshold for changes in unit labour costs between 2003 and 2007. Rapid growth in unit labour costs in the non-tradable sectors was driving this trend (Lembcke and Wolf, mimeo), which created an incentive for entrepreneurs to focus on non-tradable sector at the expense of the tradable sector. The tradable sector in the low-growth regions in Greece, Italy and Portugal saw their competitiveness further eroded by higher unit labour costs than the rest of the country.

In low-growth regions, the fast growth in non-tradable personnel costs undermined the tradable sectors, which reduced the potential of regions to catch up. Between 2000 and 2013, productivity in non-tradable sectors in low-growth regions stagnated or declined. The tradable sectors in the low-growth regions had a more differentiated pattern: in Greece and Italy productivity stalled or declined, while in Portugal and Spain it grew. In contrast to productivity, personnel costs rose in the run-up and in some cases even through the crisis in the low-growth regions.

Instead of following the tradable sector in the same low-growth region, personnel costs in the non-tradable sector appear to follow the trend of tradable sectors in the most productive regions. In part this may be due to wage equalisation mechanisms, which forces wages to be similar if it is easy to move and cost of living is similar between regions. This may also be driven by countrywide wage setting, which is often found in the public sector. This means that the tradable sector is not able to set wages based on their productivity, but have to follow the non-tradable sectors to remain attractive to employees in these regions. This forces firms in the tradable sector to raise prices and thus become less competitive. This problem could be avoided by improving the productivity of the tradable sectors in these regions, for example by improving skills or technological improvements. Alternatively, wage setting in the public sector could be more regionally adjusted to take into account wages in the other sectors in the region or regional cost of living (Lembcke and Wolf, mimeo; OECD 2016).

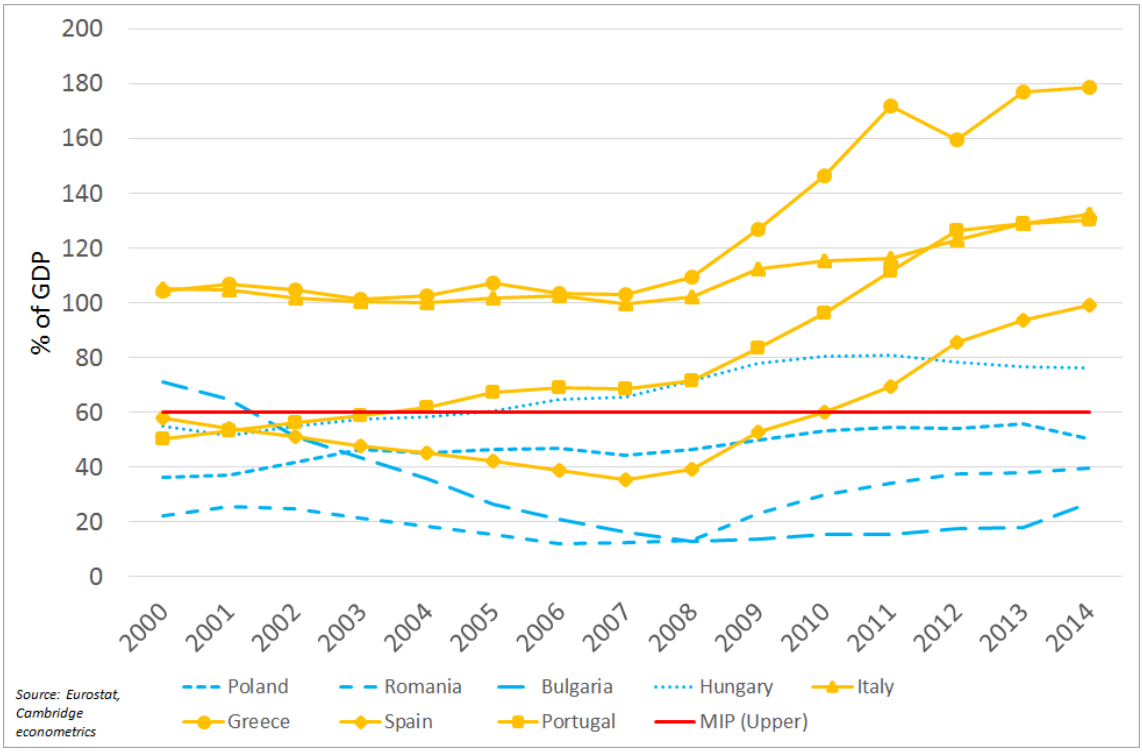
2.2 High levels of government debt in low-growth countries

High level of general government debt is associated with lower economic growth. Government debt weakens the ability of the national authorities to respond to crisis situations because of lower fiscal space and drags some of the present and future public resources because they have to be devoted to pay the interests of the debt.

The levels of public investment of countries with low-growth regions are among the lowest in the EU in terms of GDP after a sharp and dramatic decline during the economic crisis. Public investment (gross fixed capital formation) fell very significantly after debt started rising sharply. Automatic stabilisers, such as unemployment benefits, obliged governments to increase domestic spending, which came at the expense of more discretionary public investment.

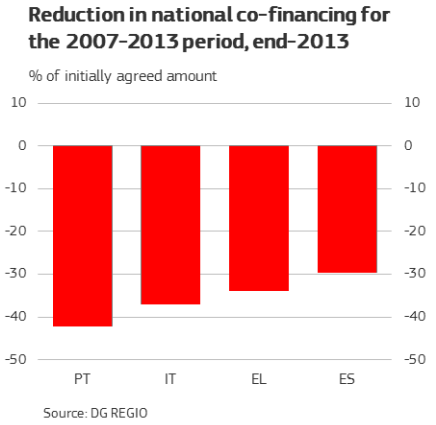
Lagging regions tend to be more dependent on public spending. The share of public expenditure in their gross value added tends to be higher, so their economic activity declines further in times of consolidation of public finances. A typical case is the Southern regions of Italy (see European Commission country report of 2015).

Figure 2-2 General government sector debt, 2000-2014



High government debt and deficits are also associated with lower aggregate impact of Cohesion Policy funding (Tomova, et al. 2013), notably through a reduction of national co-financing rates in a number of countries, especially those most affected by the crisis, to take off pressure on national budgets. This has reduced the national public spending requirement significantly from EUR 143 billion to EUR 118 billion (-18%), which has cut the overall amount of public investment carried out and thus the impact of Cohesion Policy.

Figure 2-3 Reduction in national co-financing

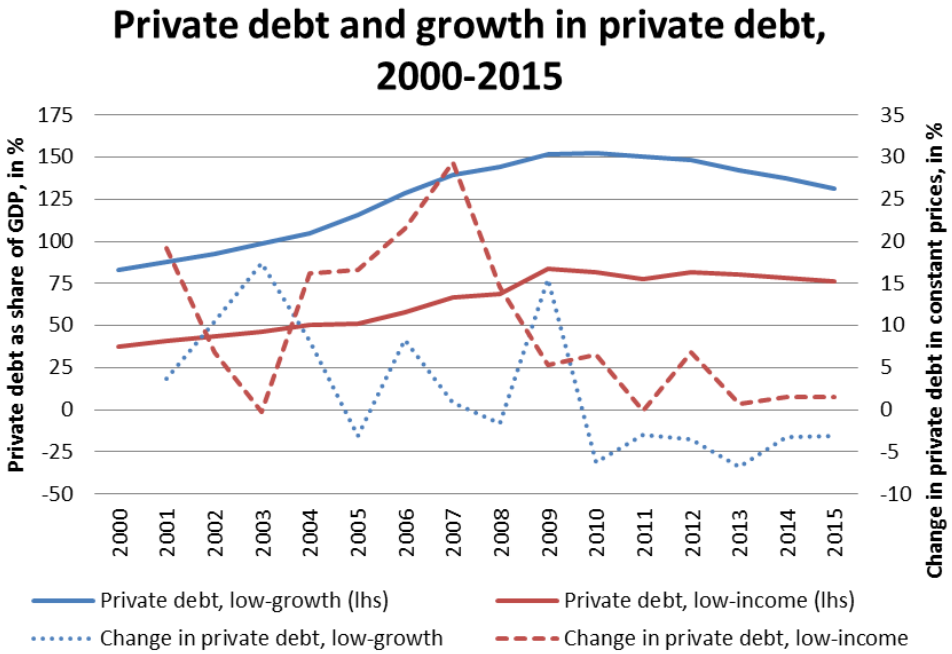


2.3 Significant disparities in the growth potential between low-income and low-growth countries

Provided it is not excessive and still sustainable, growing debt for a certain period is not worrisome per se if it is the result of productive activities and investments that expand the capacity of the economy to produce higher value added goods and

services (Giavazzi, 2010). A productive use of the debt should be translated into an expansion of capital stock, human capital and an improvement of total factor productivity.

Figure 2-4 Growth in private debt in the low-growth and low-income countries



Capital stock in low-income countries converged to the EU average both before and after the economic crisis. In low-growth countries, however, this is not the case. Their debt increased, but their capital stock did not.

The growth potential of an economy can also be strengthened by improvements in Total Factor Productivity (TFP), which incorporates factors other than capital and labour. Economic convergence and sustainable and sustained growth over the medium and long run should be founded on a convergence of TFP. The low-income countries have achieved an impressive improvement of their TFP. In contrast, TFP gains were very limited in low-growth countries prior to the crisis and TFP has worsened since the crisis.

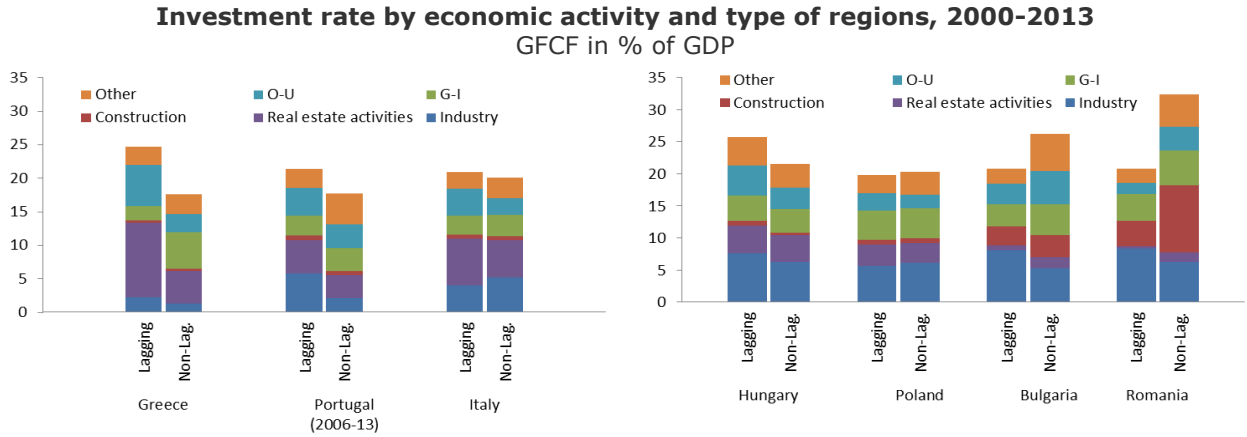
Between 2000 and 2013, total investment rates fell in all countries with lagging regions except Romania and Bulgaria. However in 2013, low-income countries stabilised investment at considerably higher rate compared to the low-growth countries[6]. While private investment in both the low-growth and low-income regions contracted sharply in 2009[7], investment trends in the two sets of regions diverged afterwards. In essence, private investment in the low-growth regions continued to decline, while it started to grow again in the low-income regions. This could have substantial implications as the inflow of private investment is likely to lead to increased employment opportunities and economic growth, while the reduction of private investment in the low-growth regions may limit such opportunities.

At regional level in Greece, Hungary and Portugal investment rates were consistently higher in their lagging regions than in their other regions. On the other hand, in

[6] In 2013, the investment rates were between 10% and 19.1% in the regions of the low-growth countries, while between 18.5% and 35.5% in the regions of low-income countries.
[7] Regional data.

Romania and Bulgaria investments were much higher in the non-lagging regions (in particular the capital regions). While in Bulgaria investment rates in lagging and non-lagging regions converged, in Romania they diverged, which will limit their capacity to catch-up.

Figure 2-5 Regional Investment rate by economic activity



Source: Eurostat, own calculations. Note: No sector data available for Spain. The G-I sector corresponds to "Wholesale and retail trade, transport, accommodation and food service activities" and O-U to " Public administration and defence; compulsory social security; education; human health and social work activities; arts, entertainment and recreation"

The sectoral breakdown of investment shows that in low-growth countries (in particular in lagging but also in non-lagging regions) investments were driven by the non-tradable real estate sector creating assets that did not contribute to rebalance the current account deficits (Baldwin and al. 2015).

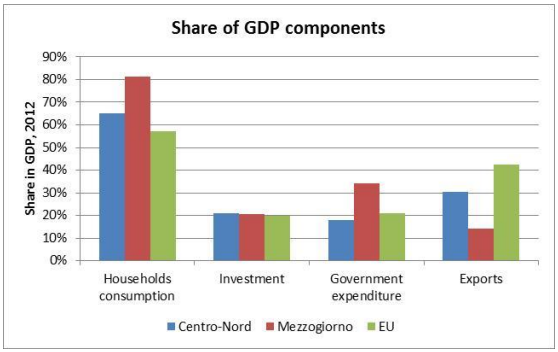
In low-income countries investment was more balanced across different sectors, with bigger shares of industry (tradable sector) which increased their economic resilience by diversifying their economic structure[8].

[8] 'Economic challenges in lagging regions'; Cambridge Econometrics, Applica, Viena Instutute (upcoming).

2.3.1 Mezzogiorno[9]

The crisis has exacerbated the long-standing socio-economic divide between the north-centre and the Mezzogiorno. Between 2008 and 2013, real GDP in the Mezzogiorno dropped by almost twice as much as it did in the north-centre (about 13% vs 7%, respectively).

Figure 2-6 Components of GDP in Italy



The economy of Mezzogiorno relies more on domestic demand and public spending than the North: in 2012 government expenditure accounted for 34% of GDP in Mezzogiorno compared to 18% in Centro-Nord. Because the crisis led to a big reduction in both domestic demand and public expenditure, including public investment, the South was more affected. Public investment declined by 27% in Italy between 2008 and 2014 and it accounted for almost 4% GDP in the Mezzogiorno compared to less than 2% in the rest of the country.

Source: Eurostat, ISTAT. Import not included in the graph

The Italian low-growth regions have substantially lower export per capita than the rest of Italy. Such low export levels indicate a structural competitiveness problem.

Table 2-2 Regional export shares in Italy

Region	Export share (%)	Per capita exports (€)
Abruzzo	1.8	5,590
Molise	0.1	1,567
Campania	2.4	1,662
Puglia	2.0	2,004
Basilicata	0.7	4,892
Calabria	0.1	189
Sicilia	2.0	1,664
Sardegna	1.2	2,885
Italy	**100**	**6,808**

Source: Banca D'Italia, Cambridge Econometrics

Table 2-3 Bank Interest rates in 2015 by enterprise size

Region	All firms	Small firms	Medium-large firms	Differential due to enterprise size
Abruzzo	6.24	8.86	5.89	2.97
Molise	7.15	8.52	6.84	1.68
Campania	6.8	9.5	6.5	3
Puglia	6.99	9.51	6.55	2.96
Basilicata	6.04	9.57	5.51	4.06
Calabria	8.5	9.92	8.01	1.91
Sicilia	7.38	8.99	7.02	1.97
Sardegna	7.04	9.45	6.56	2.89
Italy	5.04	7.94	4.7	3.24

Source: Banca D'Italia, central credit registry and own calculations.

Access to finance is more expensive in the lagging regions of Italy than in the rest of the country. Access to finance is a significant factor influencing private investment and therefore medium and long-term economic growth. In Italy's lagging regions, interest rates charged by banks are substantially above interest rates charged across Italy on average. Interest rates charged in Abruzzo show the smallest difference from the national average at 6.2% compared to 5.0% for Italy while the largest differential from the national average can be found in Calabria where interest rates charged average 8.5%, 346 basis points above the national average.

Higher interest rates limit a firm's ability to borrow for investment, which is how firms increase productivity and generate economic growth; as such, higher costs of finance limit productivity and economic growth via lower investment. Most of the interest differential can be found in the large difference charged to medium and large enterprises in the lagging regions. The higher interest rate differential potentially limits the scope for firms to experience productivity and efficiency improvements through firm scale economies as private investment is more limited by higher financing costs relative to the other regions of Italy.

[9] Regions in Italy: Arbuzzo, Molise, Campania, Puglia, Basilicata, Calabria, Sicilia, Sardegna.

2.4 Conclusion

This chapter assessed the impact of the macroeconomic framework on lagging regions. It showed that significant macroeconomic imbalances were building up in the low-growth countries prior to the crisis. These imbalances exacerbated the impact of the crisis in these countries which suffered from high levels of private and public debt, high levels of unemployment and low investments. Many of the low-growth regions saw most of their economic advances wiped out by the crisis.

On the other hand, the macroeconomic imbalances in the low-income countries were much smaller. Therefore, despite the financial crisis, their economic development was more sustainable.

To promote the competitiveness of lagging regions, public and private investments should improve productivity and not fuel a construction or real estate bubble. To boost their exports, lagging regions should make sure that growth in personnel costs is in line with productivity growth (i.e. avoid rapid growth in unit labour costs).

The lesson from the crisis is that the macroeconomic framework has a big impact on the sustainability of regional development. As a result, a close link between Cohesion Policy and the EU economic governance cycle was established for the period 2014-2020 through macroeconomic and ex-ante conditionalities[10].

[10] More information on macroeconomic and ex ante conditionalities in: European Commission, Investing in jobs and growth - maximising the contribution of European Structural and Investment Funds, (2015c).

3 Structural reforms for lagging regions

3.1 Introduction

Regions are affected by a range of nation-wide policies that are outside their direct control. However, policies that are designed to ensure equal treatment across space, e.g. rules that govern the dismissal of workers or the licensing and permitting of new firms, can have a impact that varies substantially from region to region. Factors such as different economic structures, levels of economic development, characteristics of the local labour force or the availability of natural resources contribute to the uneven impact of policies and their reforms.

Research finds that nation-wide policies affect regions very differently. For example, product market regulations in the wholesale and retail trade area appear to have particularly negative impacts on the productivity growth of a country's least productive regions (those farthest from the leading region of the country in terms of GDP per worker levels), which includes Europe's lagging regions. Conversely, trade openness appears to help less productive regions disproportionately more than other regions, particularly in low-growth countries (D'Costa, Garcilaco and Oliveira Martins, 2013). It is therefore important to consider not only the aggregate impact of nation-wide structural policies, but their impact on different types of regions and particularly on lagging regions.

Research also shows that the impact on economic growth of improving regulations is large, especially when linked with improvements in quality of institutions (Djankov et al. 2006). Eifert B. (2009) concludes that the impact of regulatory reform on growth and investment rates depends on the quality of government: relatively poor, but well-governed countries benefit the most from the reforms undertaken.

Flexible labour market regulations take into account the needs of employees, the unemployed and the employers as well as the differences between regions. Very moderate wage increases and reforms of Germany's labour market have been credited with the expansion of employment and decline in unemployment since 2003, dubbed the 'German labour market miracle' (Burda, 2016). Estimates show that rigid employment regulations can hurt productivity growth more in these regions than in regions that are already more productive, as lagging regions tend to have "thinner" labour markets with fewer highly skilled workers and are less able to cope with more rigid labour market regulations (D'Costa, Garcilazo and Oliveira Martins, 2016). This is also the case for productivity growth in both low-income and low-growth regions, in which the positive growth stimulus from greater labour market flexibility was stronger than in other European regions. But major labour market reforms are rare and changes often piecemeal or targeted at fixed-term contracts. The OECD strictness index for employment protection legislation (EPL) in Italy, for example, did not change for more than 20 years until the contentious "Monti-Fornero reform" was introduced in June 2012. Even after this reform, only 3 out of the 25 constituent indicators considered in the OECD strictness index changed.

Structural reforms may require complementary policies that take a place-based dimension into account to fully leverage their potential or to alleviate their costs. For example, labour market reforms will be of lesser benefit if there are no complementary measures to support better matching of workers to jobs or to facilitate physical access to jobs. Many of the labour market matching considerations, particularly for low-skilled workers, may involve efforts to tailor worker training to the needs of firms located in the area. Transport infrastructure is another tool, in both rural and urban areas, which can increase the effective size of a local labour market and therefore boost the productivity of firms and individual workers (OECD, 2016b).

Other nation-wide policies can also support the reform process. Spain's 2012 reform of dismissal legislation was accompanied by changes to the collective bargaining system. These changes strengthened incentives for firms to prioritise internal-flexibility measures over terminations and gave greater priority to firm-level agreements allowing for agreements that can be tailored to local needs of firms and workers (OECD, 2016a).

Many country specific recommendations (CSRs) issued in the context of the European semester to the low-growth and low-income countries concern the removal of bottlenecks for growth, jobs and investment such as increasing the efficiency of the labour market, improving the conditions for doing business and improving the efficiency of the public administration[11].

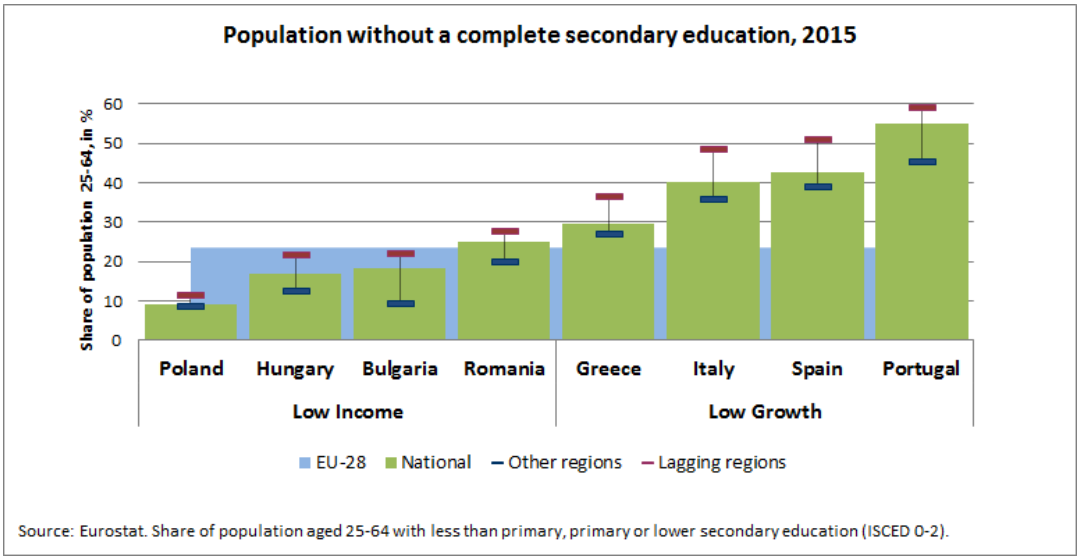
3.2 The potential impact of structural reforms on lagging regions

Putting in place conditions conducive for growth, jobs and investment is an important pre-condition for sustainable economic development. Recent analysis of the Commission shows that large potential benefits in terms of GDP, productivity or employment growth can be obtained with certain structural reforms.[12]

Reforms with the largest impact are related to the labour market (increasing the participation rates of women and of people over 50), and skill enhancement (increasing the share of high-skill workers and reducing the share of low-skill workers). Improving the business environment and regulation can also have a substantial impact.

Compared to more developed regions within their respective countries, lagging regions have lower levels of productivity and educational attainment (see Figure 3-1), lower employment rates and more difficult access to finance for businesses.

Figure 3-1 Share of low skilled in population in lagging regions



Source: Eurostat. Share of population aged 25-64 with less than primary, primary or lower secondary education (ISCED 0-2).

Reforms that reduce barriers to entry and the cost of doing business, increase labour market participation or improve the level of education can therefore have a particularly big impact on lagging regions accelerating their process of catching-up.

[11] Greece did not receive country-specific recommendations because it is subject to an economic adjustment programme.

[12] For more details see Varga J. and J. in 't Veld (2014), "The potential growth impact of structural reforms in the EU. A benchmarking exercise", European Economy, Economic Paper no. 541.

For example, actions financed by the European Social Fund to improve the employability and adaptability of unemployed people will not bring the expected results if the labour market legislation sets up barriers which overprotect the 'insiders' at the expense of the 'outsiders'. Investment in R&D and innovation will fail to trigger the creation of new enterprises if the cost of establishing and running a business is too high and access to finance is difficult.

3.2.1 Testing innovative approaches in vocational education and training

In the Polish low-income regions, the mismatch between the needs of the labour market and the formal qualifications, in particular vocational education and training is a concern. The schools have weak links with firms. Their curricula tend to be out-dated. Vocational training has a poor reputation and in-firm trainings are rarely offered.

Against this background, the implementation strand of the lagging regions initiative is developing and testing new approaches to work-based learning through a 3.5 year grant scheme in Swietokrzyskie. The goal is that during a pilot phase 30% of the required practical activities are provided via in-firm training in the selected counties ('poviats'). The most successful schemes will be promoted in the other poviats.

In the first year, the five most innovative projects will receive support. Projects should propose better cooperation between schools, Centres for Practical Learning and companies, elaborate local implementation plans using data on skill demand and supply, develop support services to facilitate cooperation (career guidance, trainee recruitment and placement systems, demand-responsive training programmes for schools and firms) and design a quality assurance tool. In-firm training will start in September 2018. A compensation system for firms will ensure financial sustainability of the scheme in the medium-term.

3.3 Labour market reforms

Several aspects of the labour market legislation remain as a structural barrier to competitiveness in the countries with lagging regions (Table 3-1).

Table 3-1 Main issues related to the labour market

	Wage setting and collective bargaining	Strict employment protection	Labour market segmentation	Inflexibility of employment
Italy				
Spain				
Portugal				
Greece				
Poland				
Hungary				
Romania				
Bulgaria				

Particular rigidity in the labour market Relatively small rigidities in the labour market

Source: Own elaboration on the basis of OECD Employment protection legislation indicoators[13], Country specific recommendations, country reports, supported by findings of a study: CE, Applica, Wiiw: 'Economic challenges in lagging regions'. The assessment takes OECD EPL scores in relation to the OECD average, analysis in the Commission Country report and existence of CSRs in the given area.

[13] Source: OECD/IAB Employment Protection Database, 2013 update. For more information and full methodology (including weights), see: www.oecd.org/employment/protection and http://data.iadb.org/

Low-growth countries have in general more rigid labour markets marked by more centralised wage setting schemes, underdeveloped firm-level bargaining and stricter employment protection legislation. They all also suffer from market segmentation (Italy, Spain, and Portugal) or prevalence of inflexible forms of employment (Greece). Low-income countries tend to have a specific problem in relation to the rigidity in their labour market, with country specific recommendations more focused on the quality of public employment services and effectiveness of active labour market policies.

In the analysed period, the wage-setting systems has been relatively centralised in Italy, Spain, Portugal and Greece as well as in Romania with a limited scope for firm-level bargaining, so that wages cannot effectively adjust to productivity with adverse effects on the competitiveness of enterprises. It also limits the extent to which wages can adjust to local or regional circumstances and represents a possible deterrent to investment.

According to the OECD indicators, all low-growth countries had considerably stricter employment protection legislation compared to the OECD average in two or more aspects of the ranking. While all countries in the group (as well as Hungary) held more protective specific requirements related to collective dismissal, regulations against dismissal of permanent workers were stricter in Italy and Portugal and regulation of temporary forms of employment in Spain, Italy and Greece.

A segmented labour market is a prominent feature of the economies in Spain, Italy, Portugal and Poland, while Greek and Romanian economies would rather benefit from more flexicurity in the labour market connected to a wider use of temporary contracts and part-time work.

Figure 3-2 Employment rate, 2015

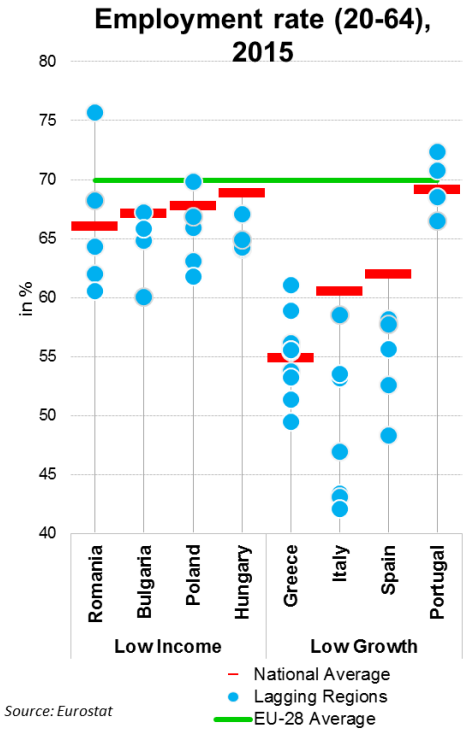
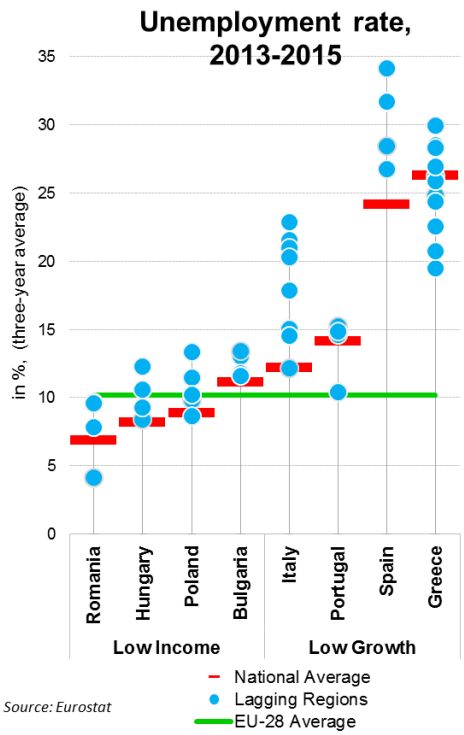


Figure 3-3 Unemployment rate,2013-2015



The employment rate in three out of four lagging regions was below the national average (Figure 3-2). Three out of four also had an unemployment rate above their national average (Figure 3-3). This shows that the labour markets in lagging regions tend to underperform relative to the other regions in their country. Given the lower levels of labour productivity in lagging regions, centralised wage setting often lead to wages which are too high to encourage employment creation in lagging regions. Labour market rigidities increase the costs and risks of employing people, this will also disproportionately affect the lagging regions given their lower levels of educational attainment and labour productivity. Therefore, introducing more labour market flexibility is likely to benefit lagging regions more.

Deterioration in the labour market situation during the economic crisis hit the less educated the most. Between 2005 and 2015 the unemployment rates of people without an upper secondary education rose substantially in all the low-growth regions as well as in the Bulgarian lowincome regions[14]. The rise of unemployment, including long term unemployment, has in turn led to further erosion of skills and lower employability. OECD skills outlook indicates that educational attainment and the level of skills often determine the labour market participation and affect the probability of finding a job and the level of pay. With some exceptions, notably in Poland, lagging regions have considerably higher shares of early school leavers compared to the EU average[15], which is combined with a high share of people withour an upper secondary education inthe low-growth regions as well as the low-income regions in Bulgaria and Romania.

3.3.1 Cohesion policy[16] support for labour market reforms

The 'Reactivar' programme in the Açores provides adult training to improve their qualifications to help them find a job or progress in their careers. The programme was organised around three components: basic education, technology training and apprenticeships. Depending on the needs of the student vocational education and an in-firm apprenticeship could be combined. In Region de Murcia Dual Professional Training supports the specialisation of the labour force through adjusting training curricula to the labour market needs. To improve employability, students learn their profession in companies in a real productive setting from the first year at school.

In Murcia (ES), ESI funds co-finance internship contracts for graduates of superior professional training in universities, research institutes and innovative regional enterprises. The training is related to ongoing research linked to the region's smart specialisation strategy. In Castilla la Mancha ESI funds co-finance labour contracts for students to complete their thesis. This improves capabilities of the region's research personnel in both public and private sectors.

The obligation to fulfil the ex-ante conditionality triggered the reform of the National Employment Agency (NEA) in Romania. The institution has developed a profiling procedure for jobseekers to enable tailor-made and integrated services and has improved cooperation with social assistance, education counsellors and sanitary mediators. To further focus on individual needs, the agency has introduced case management in its working methods. It was supported by the European Public Employment Services Network.

In Polish lagging regions Youth Employment Initiative (YEI) supported labour market activation measures targeting young people aged 15-29, particularly those who are not in employment education and training (NEETs). In line with the national Youth Guarantee Implementation Plan, young people have received both practical support for accessing the labour market. Training courses and traineeships have equipped participants with competences and professional qualifications and have often led to a job offer.

[14] In case of Spanish and Greek the increase was 3-4 fold: from ca 8-9% to 30-32% in Region de Murcia and Castilla La Mancha or 6-7% in Thesalia and Kriti to ca 25-28%. Source: Eurostat (2015).

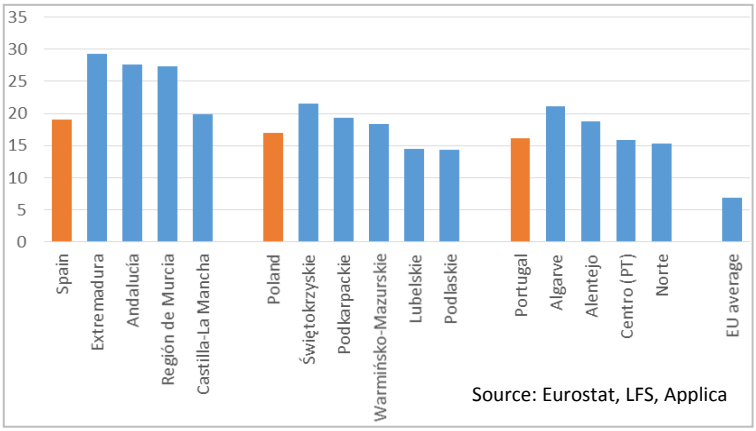
[15] The shares were especially high in lagging regions in Spain (above 30%) and Portugal (above 20%) and consistently higher in that EU average in Bulgaria and Romania. Source: Eurostat (2011).

[16] European Regional Development Fund, European Social Fund, Cohesion Fund.

3.3.2 Involuntary use of temporary contracts in lagging regions

The use of temporary contracts remained prevalent thought-out the country in Spain, Portugal and Poland. Most of the people working on such contracts do so involuntarily because they cannot find a permanent job. Temporary contracts of employment may deter employers from providing continuing training and imply higher turnover of the work force, and accordingly, are likely to have a detrimental effect on productivity. Some 16-20% of employees all employees aged 25 and over in 2015 (i.e. excluding young people who are most likely to be in fixed-term jobs because of being on a training contract or serving a probationary period) worked on fixed-term contracts in 2014 because they could not find a permanent job, well over the average EU proportion of 7%. Lagging regions perform general much worse than the country on average.

Figure 3-4 Involuntary use of temporary contracts



In Portugal the share was very similar to the national average in Norte and Centro, but well above the average in Alentejo and Algarve (19-21%). In Andalusia and Murcia the use of temporary contracts was much higher than in Spain as a whole (up to 7-8 p.p.). In Poland, three of the lagging regions, performed considerably worse than the county as a whole.

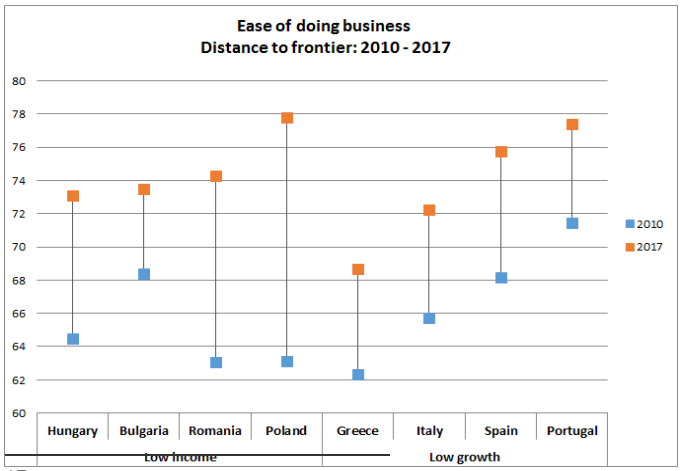
Interestingly, significant regional differences occur also in Hungary: while national average is below EU average, in all the lagging regions it is significantly higher, especially in Észak-Alföld and Dél-Alföld, where it was around twice the EU average (at 13-14%).

Source: CE, Applica, Wiiw on the basis of Eurostat (Labour Force Survey, LFS). Data relates to: 'proportion of employees (25 and over) in temporary jobs because they could not find a permanent job (2014).

3.4 Business environment reforms

Many policy reforms have been undertaken in the last decade to make business environments more 'enterprise friendly' and conductive to firm creation and growth. These reforms, as noted above, tackle cumbersome regulation and excessive administrative requirements. As a result, all countries with lagging regions reduced their gap relative to the best performing countries (Figure 3-5).

Figure 3-5 Ease of doing business: distance to best performing country (frontier)



Between 2010 and 2017[17], the low-income countries made more progress than the low-growth countries. Bulgaria is an exception, but it already had a relatively good performance in 2010. Greece had the lowest level among these countries and, despite improvements, the gap with the other countries has grown. Portugal made considerable progress prior to 2010 and was the

[17] Data relate to the World Bank report 'Doing business 2017', published in October 2016.

top performer in 2010 and the second best in 2017.

The biggest issues affecting businesses in low-growth countries are getting credit, enforcing contracts and protecting minority investors (World Bank 2017). In low-income countries, the biggest issues were resolving insolvency, getting electricity and contract enforcement.

National business reforms may have a differentiated regional impact for two reasons. First, firms in less productive regions may suffer more from a poor quality business environment. Second, the business environment may differ substantially between regions. The World Bank has measured subnational doing business in three of the countries with lagging regions: Italy (2012), Spain (2015) and Poland (2015). The Commission in cooperation with the countries has commissioned the same study for: Bulgaria, Hungary and Romania (2017) and Portugal, Czech Republic, Slovakia and Croatia (2018-2019).

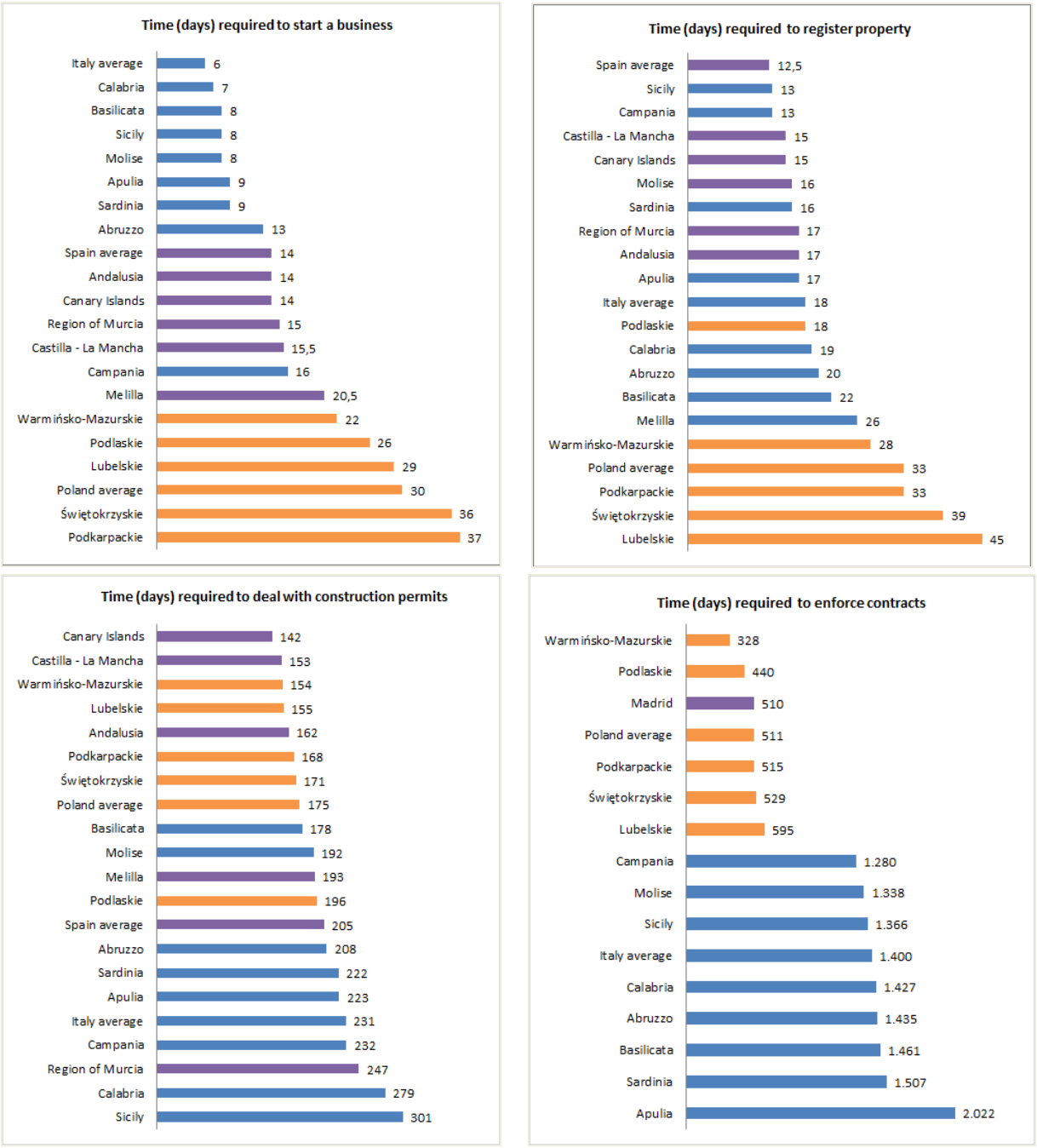
Table 3-2 Ranking of business environments in lagging regions

Country	City	Region	Aggregate ease of Doing Business (3 dimensions)	Ease of starting a business	Ease of construction	Ease of registering property	Enforcing Contracts
Poland	Olsztyn	Warmińsko-Mazurskie	1	6	12	4	1
Poland	Białystok	Podlaskie	2	8	14	3	2
Poland	Rzeszów	Podkarpackie	3	14	6	5	3
Poland	Lublin	Lubelskie	4	12	10	13	5
Poland	Kielce	Świętokrzyskie	5	13	15	9	4
Spain	Las Palmas	Canary Islands	6	15	1	15	6
Spain	Melilla	Melilla	7	18	4	14	6
Spain	Albacete	Castilla - La Mancha	8	17	3	16	6
Spain	Seville	Andalusia	9	10	9	18	6
Spain	Murcia	Region of Murcia	10	16	16	17	6
Italy	Naples	Campania	11	11	8	2	11
Italy	L'Aquila	Abruzzo	12	7	2	11	15
Italy	Cagliari	Sardinia	13	5	5	7	17
Italy	Campobasso	Molise	14	9	7	6	12
Italy	Catanzaro	Calabria	15	1	13	10	16
Italy	Palermo	Sicily	16	3	17	1	13
Italy	Bari	Apulia	17	4	11	8	18
Italy	Potenza	Basilicata	18	2	18	12	14

Source: World Bank (subnational doing business reports for Italy, Poland and Spain), own elaboration. Ranking of Spanish regions in 'enforcing contract' based on the National Doing business data. Scores for italt adjusted for changes in the DB methodology. Ranking (aggregate and per dimension) calculated on the basis of distance to frontier. See ranking simulator for Italy, Poland and Spain: http://www.doingbusiness.org/Reports/Subnational-Reports

For the three countries with sub-national data, the Polish regions are more business friendly than the Spanish and Italian regions (Table 3-2). Although these regions are clustered by country using the aggregate indicator, their performance along the four dimensions is far more varied. The Italian region of Basilicata scores worst in obtaining construction permits, but is second in starting business procedures. The opposite is true for Castilla-La Mancha: strong performance in construction permits is accompanied by the worst in starting a business. The highest ranked region, Warminsko-Mazurskie, leads in enforcing contracts, but scores poorly in construction permits.

Figure 3-6 Regional aspects of doing business in Poland, Italy and Spain



Source: World Bank, own elaboration.

Looking at the individual indicators shows that the time needed to **start up a company** is much longer in the Polish low-income regions than in the low-growth regions in Spain or Italy (Figure 3-6). In Spain and Italy, however, all the low-growth regions score worse than the national average, while in Poland three of the five low-income score better than the national average.

The time needed to **register a property** follows a similar pattern: faster in the Spanish and Italian low-growth regions and slower in the Polish low-income regions. All the Spanish low-growth regions score below the national average, while in Italy and Poland half of the regions score better than the national average.

Time needed to deal with **construction permits** follows a different pattern. The Polish low-income regions score much better and outperform all the Italian low-growth regions. In all three countries, many of the lagging regions perform better than the national average on this indicator.

For the time needed to **enforce contracts**, sub-national data is only available for Italy and Poland but the differences are staggering. Business disputes in the courts of Italian lagging regions last, 3.5-4 years, in Apulia they can take up to 5.5 years and is much worse than performance of courts in Polish lagging regions (1.5 year). It is the main reason for the weak aggregate performance of the Italian regions. It is not an issue exclusive to the lagging regions, as several Polish and Italian regions perform better than the national average.

In the same country, companies and residents can face big differences in time, number of procedures and costs needed to deal with local administration. This shows that administrative capacity at the regional and local level needs to be improved. Copying more efficient procedures developed by other regions in the same country would produce significant efficiency gains, without requiring changes in the national legal or regulatory framework. This type of improvements can be implemented relatively quickly, including through Cohesion policy programmes (boxes 3.4.1 and 3.5.2).

3.4.1 Ease of doing business in Poland

According World Bank subnational doing business report (World Bank 2015b), it takes around 36 days to start a business in Rzeszow and Kielce (Swietokrzyskie and Podkarpackie) compared to 8 days in Poznań.

As part of the implementation strand of the lagging regions initiative, the time and cost of starting up a company will be reduced by: (a) promoting online registration, (b) decreasing the rate of returned applications and (c) speeding up paper applications. The actions targeted user-friendliness of online solutions and main procedural bottlenecks at district courts.

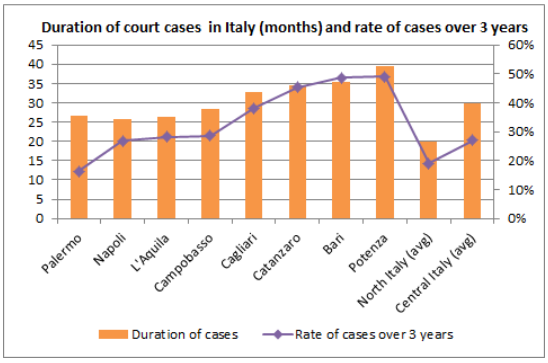
Information campaigns in the local media were used to promote online registrations. By improving the user experience and making the website more intuitive and self-explanatory, common mistakes can be avoided. For example, the usability of the government website, which provides advice on how to open a business (www.biznes.gov.pl), has been improved and is easier to find online. The Digital Poland Programme, co-financed by the EU, will introduce usability testing as a compulsory element of any e-business project. Finally, a bonus system (20-40% of the salary) was introduced for the administrative staff of the National Court Register at the District Court in Rzeszow. In November 2016 alone, the backlog of open cases was reduced by 25% (from 4304 to 3208).

World Bank estimates that more e-registrations can reduce costs by EUR 350,000 a year in both regions and reduce the total days needed by 13,020. Faster paper procedures can reduce the total days by another 5,500.

3.4.2 Regional differences in justice systems

Effective justice system, characterised by efficiency, quality and independence, contributes to a business environment conducive to entrepreneurial activity and investment. The analysis of regional and local aspects of the justice system complements the national level analysis and could contribute to identify potential shortcomings, improvements and good practices in the functioning of justice systems.

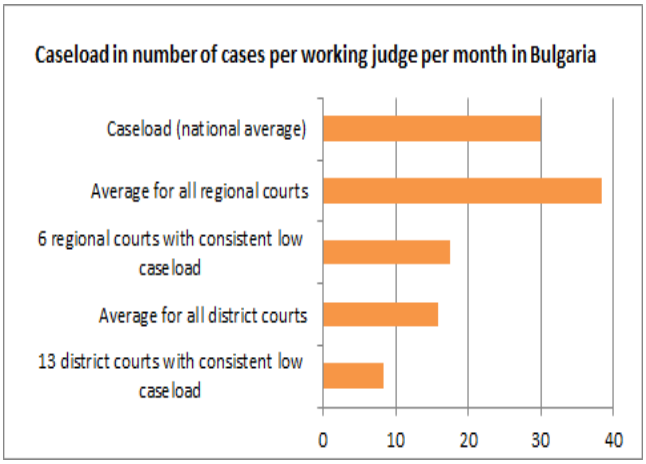
Figure 3-7 Duration of civil court cases in Italy



Source: webstat.giustizia.it; own elaboration.

In Italy, there is a significant regional variation in the efficiency of the justice system. The average duration of civil cases in 1st instance may vary from 11 months in Aosta (Veneto) to 5 years and 7 months in Lamezia Terme (Calabria), while the rates of cases lasting over 3 years span from 3% in Rovereto (Trentino-Alto Adige) to 68% in Foggia (Puglia). Although efficiency of the Italian justice system is a broader issue (Abravanel, et al., 2015)[18], judicial performance in low-growth regions with average length of the civil court case of 996 days and 40% of cases longer than 3 years is far worse than in the rest of the country. Interestingly, there is no correlation between the workload (number of cases per 100 inhabitants) and case duration in Italian regions. A dedicated Cohesion Policy programme in Italy targets a judicial reform (for more see box 4.5.2).

Figure 3-8 Caseload in Bulgaria



Assessment of judicial workloads in Bulgaria (World Bank, 2015a) provides evidence of consistent low caseload in a number of regional and district courts (Figure 3-8). Between 2010 and 2014 there were 13 district courts and 6 regional courts where caseloads per judge per month were well below the average for each type of court as well as the average actual caseload at the national level (all types of cases). All but 3 courts with consistent low caseload were located in lagging regions. A reorganisation of the judiciary could lead to a more efficient justice system with a more equitable distribution of workload.

3.5 Enterprise structure and dynamics are weaker in lagging regions

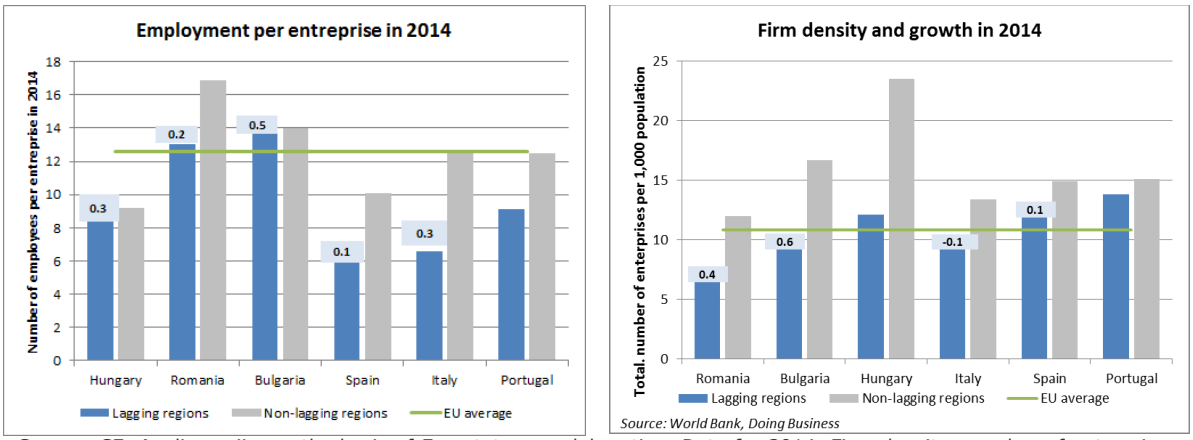
Improving the business environment can foster more entrepreneurship. This would increase start-up rates and business density as well as productivity and employment. This section relies on regional employer business demography, which is not available for Poland and Greece.

Compared to the other regions in their country, lagging regions have a much lower enterprise density in the tradable sector and a smaller employment shares in this sector. Compared to the EU average, firm density is lower in the lagging regions of Italy, Romania and Bulgaria and the size of the tradable sector is markedly lower in

[18] Out of 319 local courts (Tribunali di Provincia) the performance of only 43 have been assessed as 'good' or 'medium' meaning keeping case duration below 2 years and rate of proceeding over 3 year below 20%. Data based on analysis of 2 million civil cases in 2012/2013.

Romania, Italy and Spain. Lagging regions in Bulgaria, Hungary and Spain score around EU average in terms of size of the tradable sector.

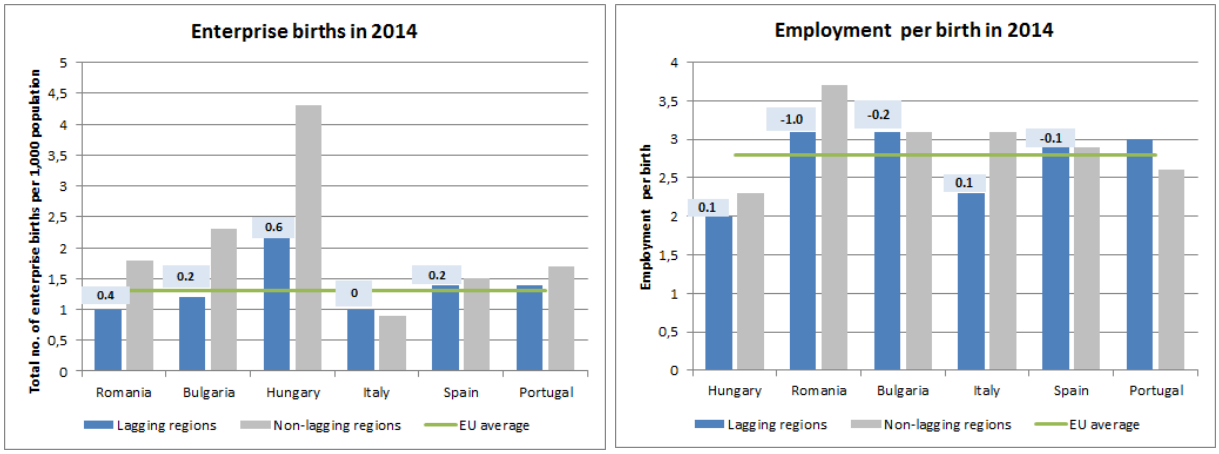
Figure 3-9 Firm density and employment per enterprise in the business sector (NACE B-N) in lagging regions



Source: CE, Applica, wiiw on the basis of Eurostat, own elaboration. Data for 2014. Firm density: number of enterprises per 1,000 inhabitants.

Lagging regions tend to have more small firms and lack larger ones. Larger firms benefit more from increasing returns to scale, can more easily integrate new technologies and link with to global value chains. As a result, a relatively small number of large firms in a region may hinder economic growth and reduce technology transfer and innovation.

Figure 3-10 Enterprise births and employees per birth in the business sector (NACE B-N), 2014



Source: CE, Applica, wiiw on the basis of Eurostat, own elaboration. Data for 2014. Birth rates: number of enterprise births per 1,000 inhabitants.

Except for Italy, lagging regions note lower enterprise birth rates than non-lagging regions, markedly so in low-income regions of Romania, Bulgaria and Hungary, but with positive growth dynamics between 2011 and 2014. Hungary stands out in comparison to other countries: only Hungarian lagging regions have had a birth rate of firms in relation to population higher than the EU average. They also enjoyed the highest growth rate.

Combining the above indicators shows that business environment was particularly unfavourable in Romanian and Italian lagging regions. In Romania, the density of enterprises in the tradable sector, the size of the tradable sector and enterprise births

per 1,000 population was the lowest among the 8 countries covered by the study and much lower than the EU average. The rate of creation of new enterprises reflects in part the difficulty in lagging regions to obtain business permits and licences, which is regarded as a major constraint on business activity by a relatively large proportion of enterprises[19].

Italian lagging regions suffer from and lower enterprise density in the business sector, overrepresentation of small firms and smaller size of newly created businesses than elsewhere in the country. The low enterprise birth rate in Italy as a whole might be related to the unfavourable position of the country with respect to the ease of starting a business.

The relatively high enterprise birth rate in Portugal and Spain might be a consequence of the reforms adopted in the last 10 years. In particular, Portugal has become one of the countries in the EU in which it is the easiest and least costly to start a business. There are differences, however, between regions. In both Alentejo and Centro, the business environment seems less favourable than in the other two lagging regions (Norte and Algarve) and the enterprise birth rates are below the national and the EU average. In both regions, a higher birth rate is accompanied by a lower death rate, indicating a business environment more conducive to enterprise growth and development.

3.5.1 Business demography in Poland and Greece[20]

Despite a high density of businesses, most of the enterprises in Greece are very small and there are fewer medium-sized and large enterprises relative to population than elsewhere in the EU. The majority of employment in the tradable sector was concentrated in very small firms.

On the contrary, in Poland the density of enterprises in the tradable sector was much lower than the EU average, but the tradable sector was much bigger in terms of employment, indicating relatively large number of medium and large companies. However this more favourable business structure was not visible in the lagging regions. The birth rate of enterprises relative to population was also lower in Poland compared to the EU average, in particular in lagging regions, which confirms that starting a business remains cumbersome (in particular in Podkarpackie and Świętkorzyskie covered by the applied strand of lagging regions initiative).

[19] According to World Bank Enterprise survey (BEEPs) the percentage of companies in 4 out of 5 Romanian lagging regions (15.4%-18.4%) reporting issues with licences and permits is considerable higher compared to the Romanian average (12.4%) an EU13 average (7.6%).

[20] For Greece and Poland data is based on business demography. For Poland data relate to 2010. No regional data for Greece.

3.5.2 Enterprise competitiveness scheme in Poland

As part of the implementation strand of the lagging regions initiative, a demand-driven voucher scheme is being set up to improve the competitiveness of SMEs in the least developed areas of regions of Podkarpackie and Świętokrzyskie. This scheme partially reimburses the costs of business services. It addresses the concerns identified by local business leaders, such as weak access to financing, high barriers to entry for public support schemes and a lack of awareness of strategic business services. In these areas, few targeted business services are on offer and business leaders were concerned about their quality. Although most firms lacked a strategy to boost their exports or differentiate their products, they were reluctant to pay business services to develop such a strategy.

SMEs can select a service through an online platform with open access for all public and private business service providers. The platform, which is set up by a public body, allows users to comment on the quality of the services. Reimbursement occurs after the full delivery of the service and the SMEs decide whether the service complies with the terms of reference. An independent advisor assists SMEs to identify their needs and select a service provider. Depending on the type of service, the value of the vouchers, the co-financing rates and length of the service are adjusted (Table 3-3).

Table 3-3 Enterprise competitiveness scheme in Poland

	OPERATIONAL	STRATEGIC	GROUP SERVICES
RATIONALE	Improve, refine, or expand existing operations	Redesign activity, develop new product(s), or enter new markets	Release constraints that afflict a group of firms collectively
VOUCHERS	Small value vouchers Basic eligibility rules Max aid intensity: 50%	Medium value vouchers Competitive selection Max aid intensity: 60%	High value vouchers Competitive selection Max aid intensity: 85%
DURATION	12 months	18 months	24 months

3.6 Conclusion

To promote growth in lagging regions, more structural reforms in the area of the labour market and the business environment are needed, as highlighted by the country specific recommendations issued in the framework of the European Semester. Evidence shows that the lagging regions usually score poorly on labour market and business dynamism indicators.

Many aspects of the business environment show wide variation within a country despite a common national framework. This implies that improving local and regional administrative capacity can produce significant efficiency gains. Cohesion Policy can address specific challenges via its place-based approach. It has increased its investments in administrative capacity building in the most recent financing period. It also introduced ex-ante conditionalities linked to good governance and administrative capacity (European Commission, 2017).

The removal of regulatory and administrative obstacles will also increase the impact of Cohesion Policy investments. Training to improve the employability and adaptability of the unemployed will only trigger results if the labour market rigidities are removed. Investment in R&D and innovation or entrepreneurship will only trigger the creation of new enterprises if the cost of establishing and running a business are not too high and financing is accessible.

This is the reason why the link between the country-specific recommendations and Cohesion Policy funding has been strengthened in 2014-2020 programming period. All relevant CSRs have been addressed in the Cohesion policy programmes covering reforms in areas such as R&D and innovation, energy and transport, health care, labour market participation, education, social inclusion and reform of the public administration (European Commission 2015b).

4 Investment needs and growth determinants in lagging regions

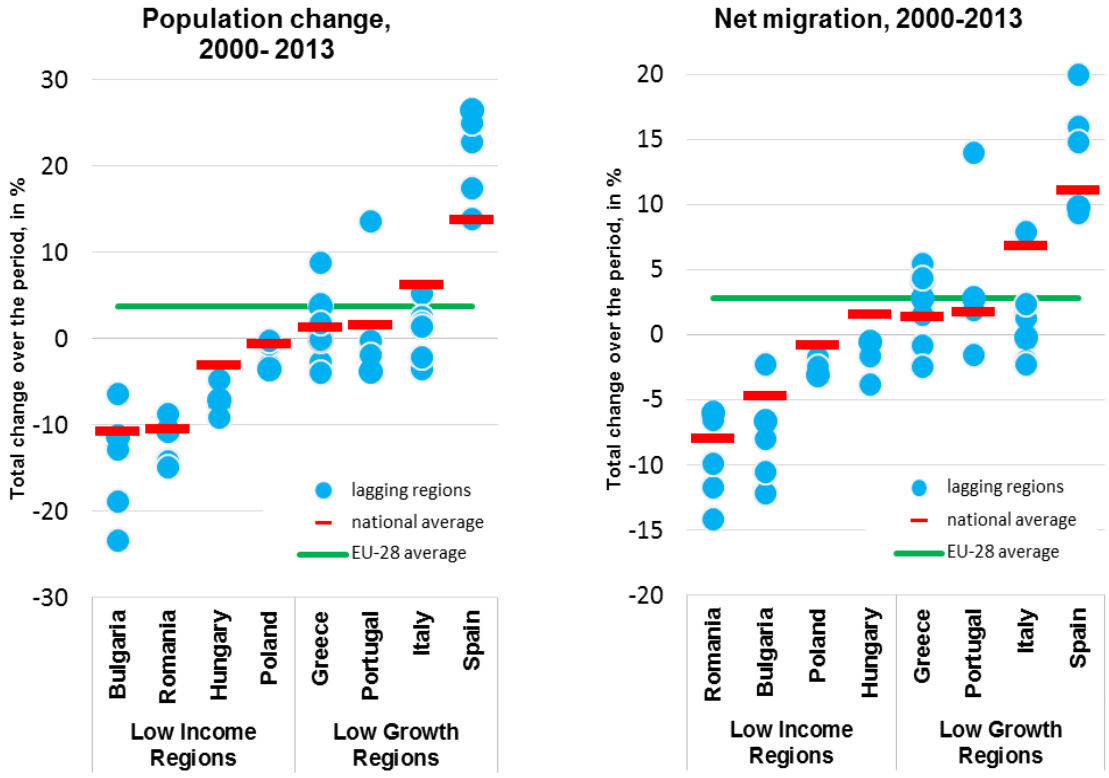
This chapter describes the low-growth and low-income regions in terms of demography, urbanisation, accessibility, human capital, innovation, governance and investments by the EU, national governments and the private sector. It concludes by assessing the investment needs and the growth determinants in these regions.

4.1 Lagging regions continue to urbanise, but the low-income regions are losing population

Since 2000, the population in low-income regions and countries has shrunk, while it has grown in low-growth regions and countries. Among the low-income countries, the reduction has been the strongest in Romania and Bulgaria (-10%), more moderate in Hungary (-3%) and in Poland the reduction was very small. Almost all the low-income regions lost a bigger share of their population than the country they are in. In the extreme case of Severozapaden even more that 20% of population (Figure 4-1).

In the low-growth countries, the lagging regions varied in performance. Some regions had a growing population, others lost some population. Change was mostly slower than the country as a whole; except in Spain where the population of the lagging regions grew faster than in the country as a whole.

Figure 4-1 Population change, 2000-2013
Figure 4-2 Net migration, 2000-2013



Source: Eurostat, own elaboration

The main determinant of population change was migration. At the country level, migration led to a positive increase in all four low-growth countries as well as Hungary. At the regional level, all the low-income regions compare to only one in four

low-growth regions lost population due to migration. Compared to changes at the country level, almost all low-income regions lost more population to migration, while only half of the low-growth regions did.

The impact of natural change was smaller. It was close to zero in Poland, Italy, Greece and Portugal. Bulgaria, Hungary and Romania lost between 6% and 3%, while Spain gained 2%. The variation in natural change between the regions was much smaller with roughly half of the lagging regions slightly above the country average and half slightly below.

The demographic trends in lagging regions can be summarised as follows:

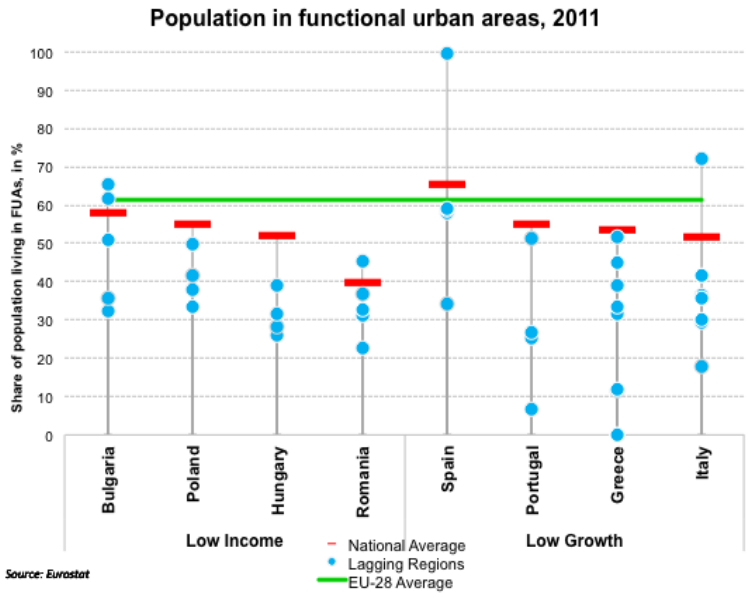
- All low-income regions lost population since 2000 primarily due to net migration, which was negative in all these regions.
- Only one in three low-growth regions lost population since 2000. Net migration was the main cause, which added to positive natural change or in some cases compensated for negative natural change.

Lagging regions are not purely rural. Each country with lagging regions has one or more substantial cities located ina lagging region, including Naples, Palermo, Porto, Seville, Thessaloniki, Debrecen, Lublin, Plovdiv and Cluj-Napoca.

Four out of five lagging regions have at least 25% of their population in a city and its commuting zones (functional urban areas or FUAs). One out of five lagging regions has even more than 50% of their population in a FUA (Figure 4-3). Compared to their country, however, most lagging regions have a lower share of their population in a FUA.

The countries with lagging regions have between 50% and 60% of their population in FUAs, which is slightly below the EU average of 61%. The only two exceptions are Spain with a higher share (65%) and Romania with a much lower share (40%).

Figure 4-3 Population in functional urban areas, 2011



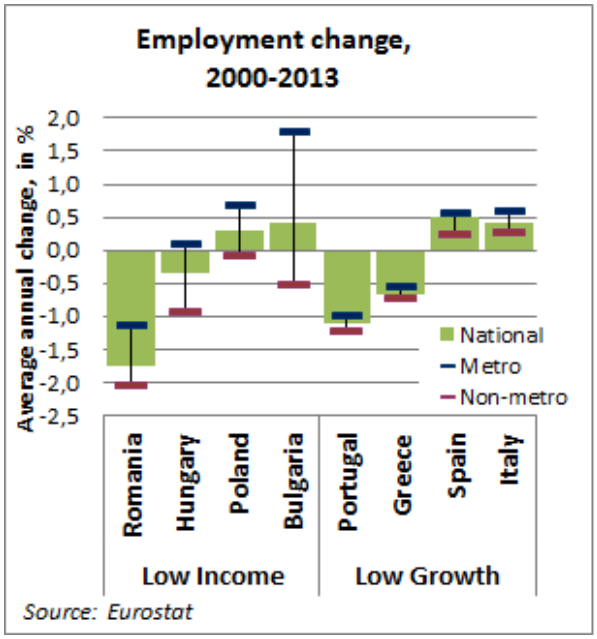
Since 2000, the population share in functional urban areas has increased in all eight countries with lagging regions. In most cases, the increases were considerably faster than in the EU as whole. Only Italy and Poland had similar (low) increases in the share of population in FUAs.

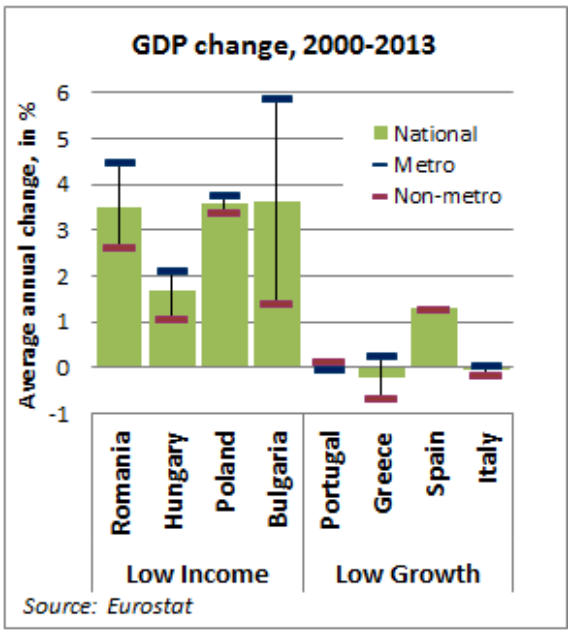
In most lagging regions (40 out of 47) the population share in FUAs increased since 2000. But in many lagging regions (28 out of 47) this increase was smaller than in their country.

4.2 Stronger economic growth in the metros of the lagging regions

Since 2000, metropolitan regions[21] (hereafter 'metro regions) in the EU have tended to perform better in employment and GDP growth than non-metro regions. This is also the case in lagging regions: metro regions in lagging regions had higher employment growth (or a lower reduction in employment) not only than the non-metro regions in the lagging regions or but also than their respective country as a whole. In general, this performance gap was much bigger in the low-income countries than in the low-growth countries (Figure 4-4 and Figure 4-5).

Figure 4-4 Metro and non-metro employment change in lagging regions, 2000-2013
Figure 4-5 Metro and non-metro GDP change in lagging regions, 2000-2013





The metro regions in low-income regions also performed better than the non-metro regions or the country in terms of GDP growth. The difference in Poland was quite small, but in the other three the gap between the metro and the non-metro was big.

In the low-growth regions, the difference between the metro and non-metro were very small, with the exception of Greece were Thessaloniki performed better than the country and the non-metro.

4.3 Transport accessibility can be still be improved in low-income regions, but less so in low-growth regions

The lagging regions score below the EU average potential road accessibility[22] and below the national average (Figure 4-6). This does not, however, imply that this lower accessibility determines their lower levels of economic development. Many regions in

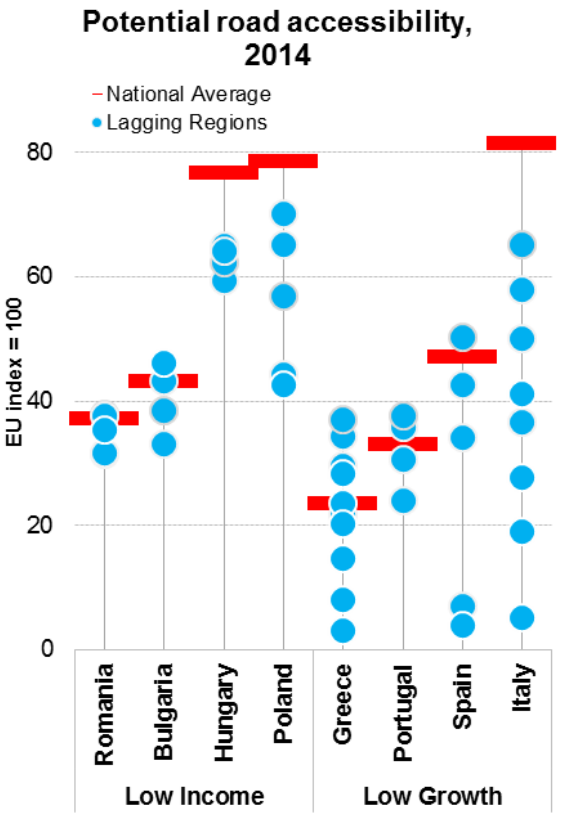
[21] Metro regions are NUT-3 regions or grouping of NUT-3 regions representing all functional urban areas of more than 250,000 inhabitants. The typology of metro regions distinguishes: capital city regions, second-tier regions and smaller metro regions.

[22] Potential road accessibility measures the population that can be easily reached by road. It uses inverse time distance weighting to ensure that population close by matters more than population that is far away.

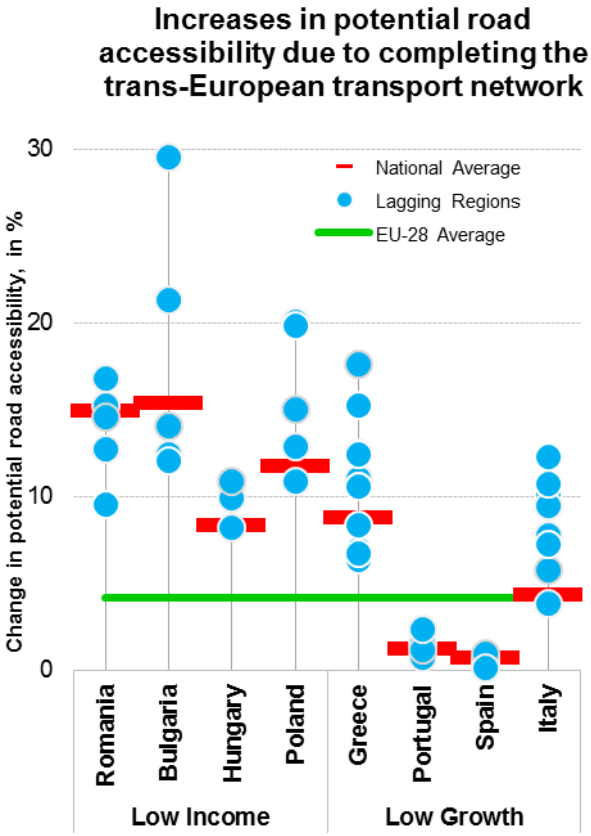
the EU with similar levels of accessibility have reached very high levels of development, such as Ireland, Scotland, Northern Finland or Sweden.

The completion of the trans-European Network for road Transport (TEN-T) will substantially increase the accessibility of the low-income regions and often more so that of their country (Figure 4-7). The increases in most low-income regions are higher than the EU average, which means that relatively to the EU their access to the single market improves. This will make these regions more attractive for manufacturing.

Figure 4-6 Potential road accessibility, 2014
Figure 4-7 Increases in potential road accessibility due to the completion of the trans-European transport network



Source: Eurostat, TomTom, DG MOVE, JRC calculations



Source: Eurostat, TomTom, DG MOVE, JRC calculations

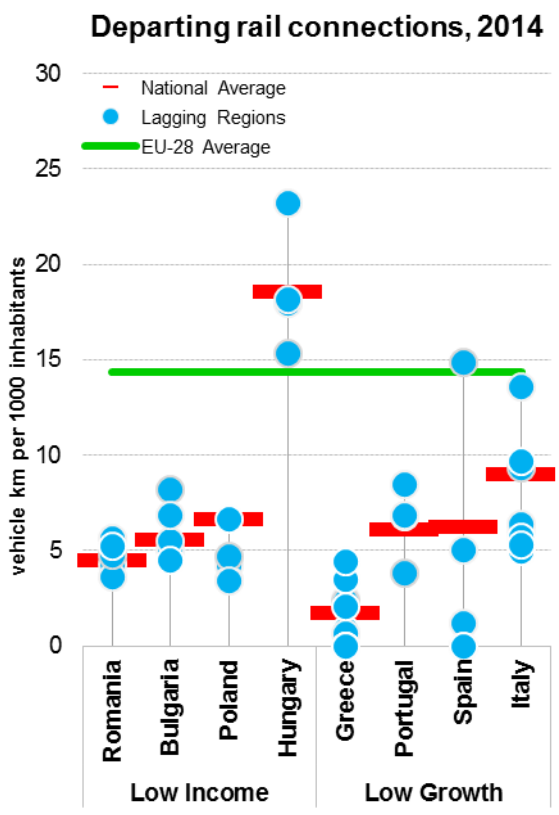
Completing the TEN-T will not lead to higher potential road accessibility in Portugal and Spain. Given the high levels of road infrastructure provision and high levels of road investments in the past two decades in these two countries, further new road construction is unlikely to have a significant impact on the access to the single market.

All the countries with lagging regions, except Hungary, have far less rail vehicle km per inhabitant (Figure 4-8). In most, it is less than half the EU average. The lagging regions tend to score low as well and often below the national average. These low figures may be in part due to low levels of urbanisation, low-incomes and a history of low infrastructure investment. It does show that passenger rail does not offer frequent services in these regions.

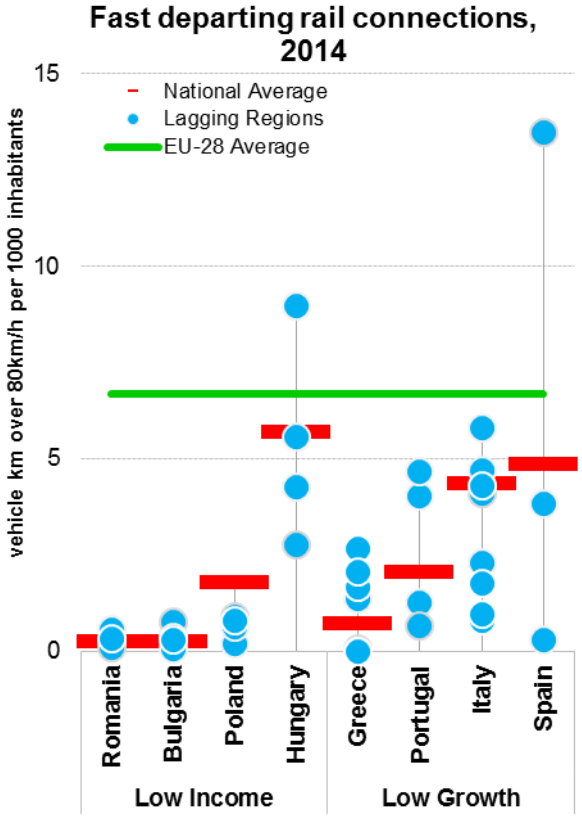
Moderate to high speeds are important to compete with the automobile. Rail connections with a speed of more than 80 km/h are, however, almost non-existent in Romania and Bulgaria (Figure 4-9). Also in Greece and Poland, such connections are

relatively rare. Italy, Spain and Hungary have a score closer to the EU average, but several of their lagging regions still score well below the EU average.

Figure 4-8 Departing rail connections, 2014
Figure 4-9 Fast departing rail connections, 2014



Source: Poelman and Ackermans 2016

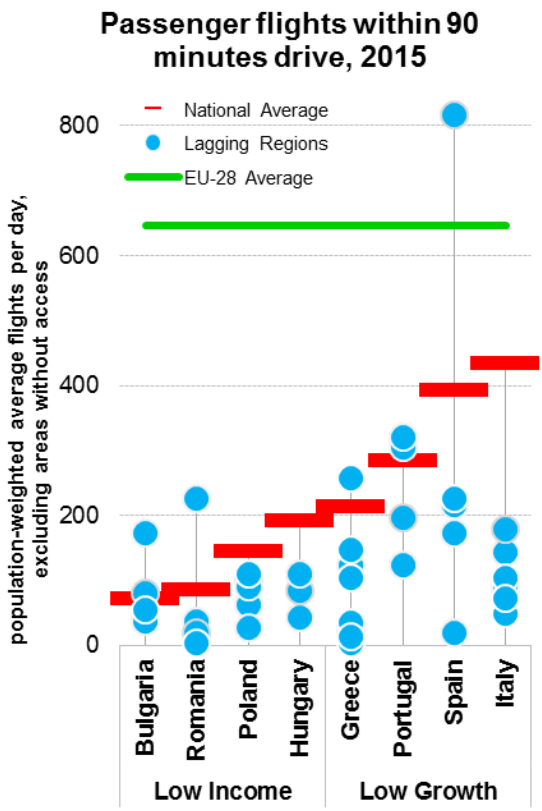


Source: Poelman and Ackermans 2016

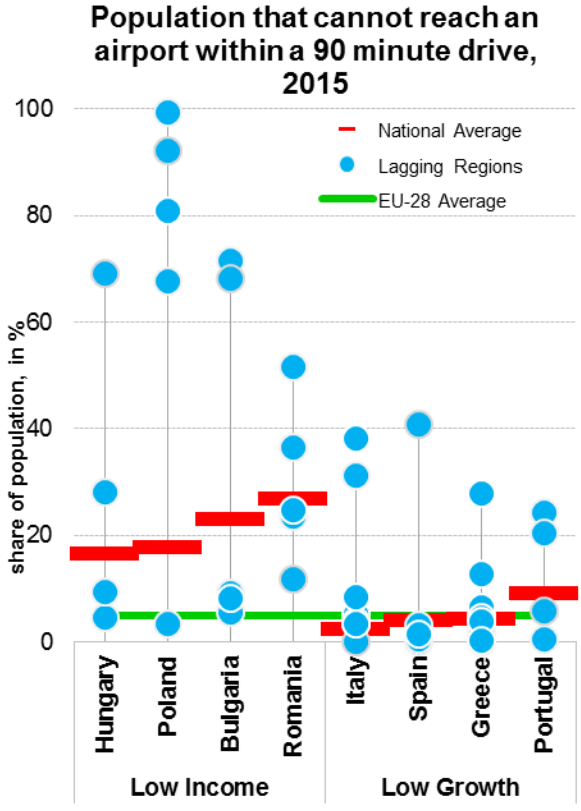
Access to an airport with passenger flights is much lower in the low-income regions than in the low-growth regions (Figure 4-11). For example, in Podlaskie more than 99% of the population cannot reach an airport with a 90 minute drive compared to an EU average of only 5%. Each country has one or more low-income regions with more than 50% of the population without access to an airport within a 90 minute drive.

These low levels of access may due to a range of factors including the quality of road network, the dispersion of the population, low-incomes and the presence/absence of popular tourism destinations. The TEN-T will help improve access to the main airports and the general upgrading of the road network will improve access to smaller airports. In Greece, Spain and Italy the share of population without access to passenger flights is below the EU average and most of their low-growth regions score well. Portugal has a share just above the EU average. The more rural regions of Centro and Alentejo score worst with between 20 and 24% of their population without access.

Figure 4-10 Passenger flights within a 90 minute drive, 2015
Figure 4-11 Population that cannot reach an airport within a 90 minute drive, 2015;



Source: Eurostat and REGIO calculations



Source: Eurostat and REGIO calculations

Analysing the areas with access shows that in all eight countries people tend to have access to fewer passenger flights than the EU, but the low-income countries score much lower than the low-growth countries. On top of that, most lagging regions have access to a lower number of flights than their country. Half the lagging regions have access to less than 100 flights a day.

The low-income regions have high shares of population without access to passenger flights (37%) and the number of flights in accessible airports tends to be low (65 a day). In low-growth regions most people have access to passenger flights (only 7% lack access), the number of flights in accessible airports (166 a day) is three times higher than in the low-income regions, but typically below the national average.

4.4 Innovation and human capital in lagging regions

Evidence on long term growth and innovation dynamics of the EU regions shows that human capital is often a stronger predictor of long-term regional growth and innovation than R&D (Crescenzi, Rodríguez-Pose 2011, Rodriguez-Pose, Ketterer 2016, Annoni, Catalina-Rubianes 2016) both in all EU regions and in lagging regions.

The lagging regions all belong to modest or moderate innovators according to Regional Innovation Scoreboard 2016. This edition captures an interesting change. In the 2014 edition, the difference between the low-income and low-growth regions was clear. All but two low-income regions (Podkarpackie in Poland and Del-Alfold in Hungary) were in the modest innovators group. All low-growth regions were moderate innovators. But in 2016, all lagging regions in Hungary and Polish region of Podlaskie became moderate innovators, while some Greek low-growth regions and Sardegna in Italy

dropped to the modest innovator group. The Regional Ecosystem Scoreboard[23], which captures the entrepreneurial and innovation ecosystem, also assigns low to very low scores to the lagging regions Compared to the innovation scoreboard, the Polish and Hungarian low-income regions score better, some even among the top regions in their country, while the Greek low-growth regions score worse. The smart specialisation strategies[24] and the smart specialisation platform (S3 platform[25]) were set up to help EU regions improve their innovative capacity (see box 4.4.3)

R&D in all lagging regions is mainly public and accounts for a lower share of GDP than in the EU as a whole (Figure 4-12). Vast majority of lagging regions spend between 0.5% - 1% GDP for research and development. The gap to EU average of 2% of GDP is even bigger in Bulgaria and Romania, where all lagging regions spend less than 0.5% GDP.

In four Greek and six Italian low-growth regions, public R&D accounted for a higher or similar share of GDP as compared to the EU. These public investments, however, were not matched by private ones. This implies a poor link between the needs of regional economy and publicly funded research. Portugal regions of Notre and Centro show the most balanced mix of public and private expenditure, while in the low-income Hungarian regions and Podkarpackie in Poland private R&D expenditure exceeded public.

4.4.1 Research mismatch in lagging regions

The European regional university system performance index 2013, based on a set of micro data, provides an innovative measure to assess the research-related aspects of university performance at regional level.

In general, the lowest regional university performance is observed in Eastern and Southern Europe. Polish and Italian lagging regions perform particularly badly: all Polish lagging regions and three Italian (Calabria, Basilicata and Sicilia) are ranked in the bottom 20 regions in terms of research performance. Lagging regions in Portugal and Bulgaria perform marginally better. However, while in Italy the south-north divide is visible also in this respect and Bulgaria and Portugal show a relatively strong performance of the capital region, Poland score low across the board. This suggest that while Portugal, Bulgaria and Italy may have a national 'excellence centre' that could push the research agenda forward, Poland is the only country without a leader in research performance. In fact no Polish region shows even an average performance.

Romania, Greece and Spain do better that the other countries with lagging regions and have several regions with stronger university performance. However the relevance of the research for the regional economy is unclear. The efficient interaction between higher education institutions and the productive sector is at the heart of competitiveness in a knowledge-based economy. In Greek and Spanish regions, and lagging regions in particular (East Macedonia and Thrace, West Greece, Andalusia) the relatively higher university system performance scores did not match a similar score in the labour market efficiency as well as regional competitiveness index, indicating a mismatch between regional university performance and the needs of the regional economy. The explanation may be twofold: first is that regional higher education institutions behave as 'ivory towers': they do not respond to the actual needs of the labour market and do not conduct the research for the regional business community. The second is that the labour market is lacking the capacity to absorb knowledge produced by universities. In any case they can neither increase employment levels, nor labour productivity and consequently growth.

Source: Vertesy et al. 2013

Human capital can help regions to respond to economic shocks through identification of short-term innovative solutions to a changing external environment. This capability

[23] https://ec.europa.eu/growth/smes/cluster/observatory/regional-ecosystem-scoreboard_en

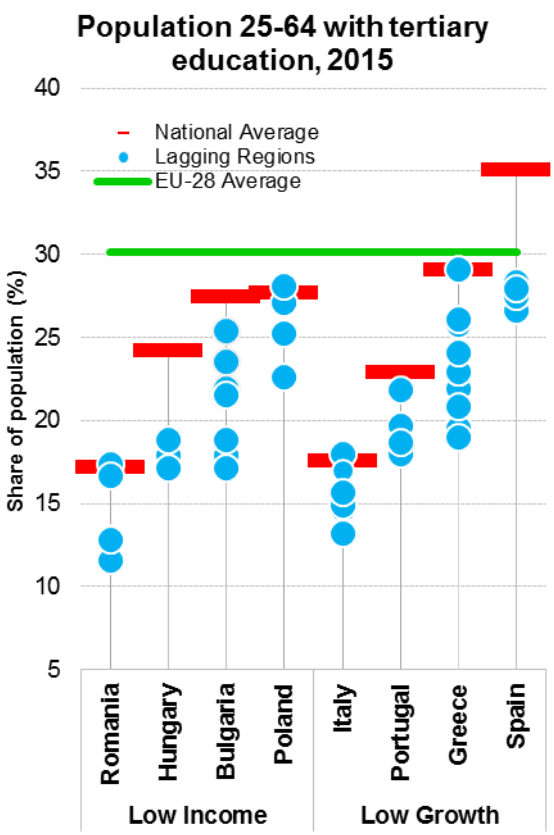
[24] The communication from the Commission on smart specialisation with accompanying staff working document will be published in the first half of 2017.

[25] http://s3platform.jrc.ec.europa.eu

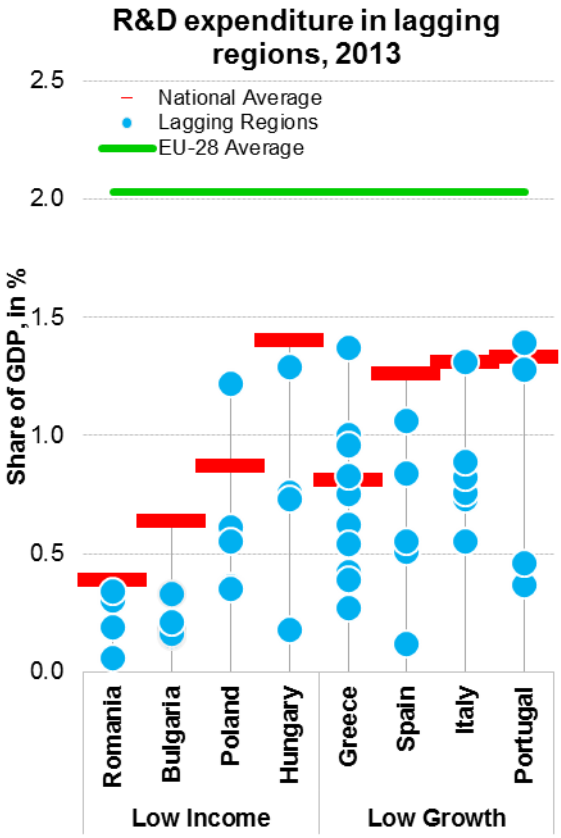
does not necessarily derive from technology-driven processes supported by R&D investments but is more likely to be boosted by a skilled labour force that enhances rapid process and organizational innovation (Crescenzi, 2015).

In the low-income regions the low levels of education and the low degree of redeployment of the workforce are important problems not just per se, but also because they limit the innovative and 'absorptive' capacity of the region in the longer term. Due to shorter and shorter technology cycles, relying on the skills acquired in formal education can lead to a quick depreciation of skills and to the lack of adaptation to new challenges and competition. Without a properly trained workforce many low-income regions in Europe may remain stuck among the innovation averse and perhaps even become low-growth regions in time (Rodriguez-Pose, Ketterer 2016).

Figure 4-12 Population 25-64 with tertiary education, 2015
Figure 4-13 R&D expenditure in private sector in lagging regions, 2013



Source: Eurostat



Source: Eurostat

Virtually all lagging regions have a lower share of tertiary educated population than their country does. The lagging regions of Italy and Romania score particularly low, which is likely to limit economic growth, when high productivity growth can no longer be assured by learning from other regions.

Analysis of growth determinants indicates that particular attention needs to be paid to the insertion of university graduates into the labour force, avoiding common problems of mismatch between educational supply and labour demand and over-education (Rodriguez-Pose, Ketterer 2016). Unemployment among people with tertiary education as well as the reported skills and qualification mismatch (box 4.4.5) give a further insight into relevance of the educational system for the regional economy.

Low-growth regions, particularly in Greece, Spain and Italy, show high and growing unemployment rates for the tertiary educated. Even taking into account cyclical factors, the data suggest that these regional economies may not generate enough demand for graduates, but it may also be due to the quality of the skills or the type of skills provided by the educational system.

4.4.2 Supporting smart specialisation in lagging regions

On the initiative of the European Parliament, the European Commission provides targeted support to selected lagging regions (Severen Tsentralen in Bulgaria, Warminsko Masurskie in Poland, City of Debrecen, Hajdú Bihar County, Észak-Alföld in Hungary, Eastern Macedonia and Thrace in Greece, Puglia in Italy, Centro in Portugal and Extremadura in Spain). This initiative combines a range of region-specific support activities with more cross-cutting analytical work to identify and disseminate lessons to all lagging regions. This incude:

- Specific support to the development, refinement and ongoing implementation of smart specialisation strategies, building on a process of entrepreneurial discovery;
- Development of a coordinated and sustainable approach, to secure and enhance engagement of all relevant stakeholders (business, academia, research organisations and civil society);
- Enhancement of linkages between research and innovation smart specialisation strategies (RIS3) at regional and national levels.

As part of the implementation strand of the lagging regions initiative, the smart specialisation strategies of the Nord-Est and Nord-Vest regions in Romania were further developed. A more systematic cooperation between key national, regional and local partners is being promoted to allow for more regional adjustment of the national sectoral policies. The support provided to the two regional development agencies by the European Commission has facilitated the dialogue between firms, researchers and civil society through workshops, conferences, and in particular a series of dedicated focus groups. This has already resulted in several concrete projects. In the North East region, the universities placed increased emphasis on entrepreneurship and technological transfer. A new interdisciplinary master degree on change management and entrepreneurship was launched.

Since 2015, the Romanian Nord-Est region and the Noord region of the Netherlands have a joint programme for regional development based on their respective smart specialisation strategies. The European Commission's TAIEX 'Peer to Peer' programme supported the preparatory exchanges between the two regions. The cooperation covers agro-food, waste management, water, new materials, sustainable energy and healthy living as well as skills development through closer cooperation between educational institutions.

4.4.3 Technology transfer centre in Poland

In Poland, cooperation between business and researchers is underexploited. Firms often are not aware of R&D services offered by universities, while universities are not so aware of the business needs and have few financial incentives to change that. Complexity of state aid rules and concerns about potential financial corrections added to the problem.

As part of the implementation strand of the lagging regions initiative, a new business model for the technology transfer centre and professionalization of its services in Podkarpackie region is being developed. A new overview of R&D equipment at the Rzeszow University and Rzeszow Technology shows it can improve products and services of firms. Through specific examples, more clarification has been provided on how this equipment can be used taking into account state aid rules and tax law.

Finally a technology transfer centre has been designed incorporating the lessons from the centres in Toulouse (France), Aalto (Finland) and Leuven (Belgium). It is responsible for marketing the R&D activities of both universities. To match research demand and supply, a technology brokerage platform will identify business' needs, adapt to them research programmes and market R&D equipment, while project valorisation team will seek to increase technology readiness of the most promising R&D projects.

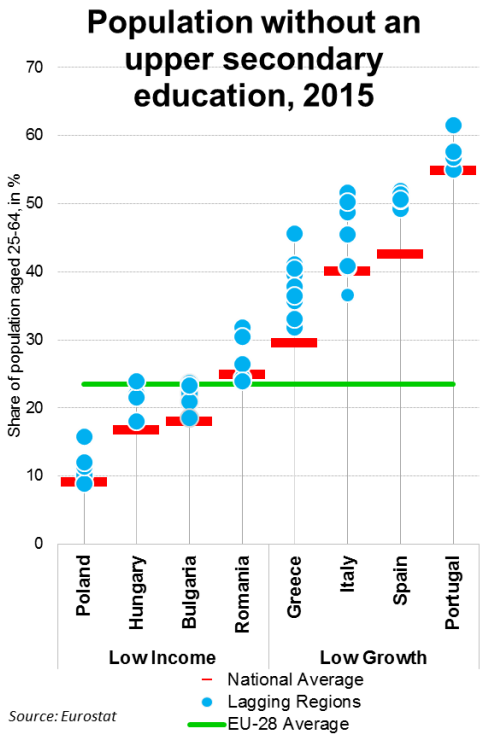
A new lab, ProtoLab, will allow young researches to test new R&D solutions in commercial applications. The cooperation between the universities and the competitively selected operator of the lab will be governed by a long-term agreement.

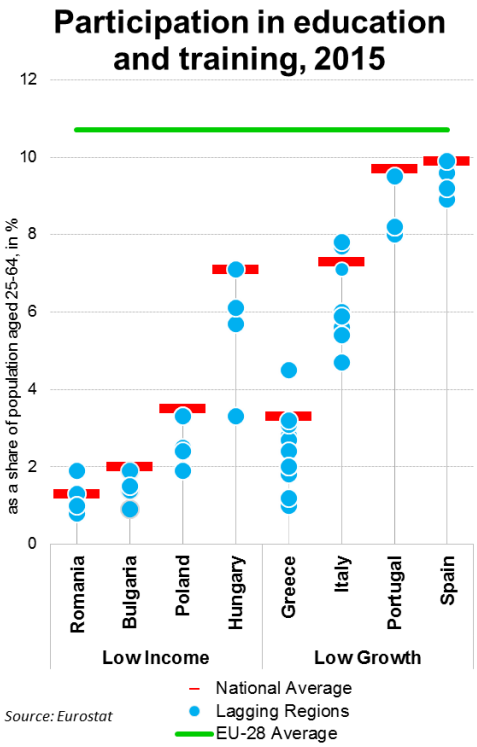
4.4.4 Cohesion policy investment in human capital

In Italy, during the programming period 2007-2013, a significant amount of the Cohesion policy budget was allocated to enhancing human capital, in particular by promoting the design and introduction of reforms in education and training systems. This investment was crucial for boosting the use of new technologies and integrating them into the Italian educational system. Studies demonstrated that operations supported by Cohesion policy contributed to achieving a significant decrease in early school leaving (from 26.4% in 2006 to 21.8% in 2011), increased use of digital equipment and digital competences in schools, as well as improved student motivation and grades.

A high share of the labour force without an upper secondary education has a negative impact on regional economic growth (Annoni, Catalina-Rubianes 2016). The low-income regions in Poland, Hungary and Bulgaria all score better than the EU average, while all the low-growth regions score (far) worse (Figure 4-14). Participation in training or education, which can help to improve and update skills, tends is below the EU average in all the lagging regions (Figure 4-15).

Figure 4-14 Population without an upper secondary education, 2015
Figure 4-15 Participation in education or training, 2015





The Single market integration and competitiveness report (European Commission 2016) notes that the increases in human capital through more education and training has only had a minor impact on productivity growth in EU Member States, although it is closely linked to productivity levels. Education that takes into account the skill needs of the regional economy and promotes technological change may have a bigger impact on productivity growth. Given the poor performance in terms of education and

training, lagging regions should include these aspects into their development strategy, but avoid both over- and under-skilling.

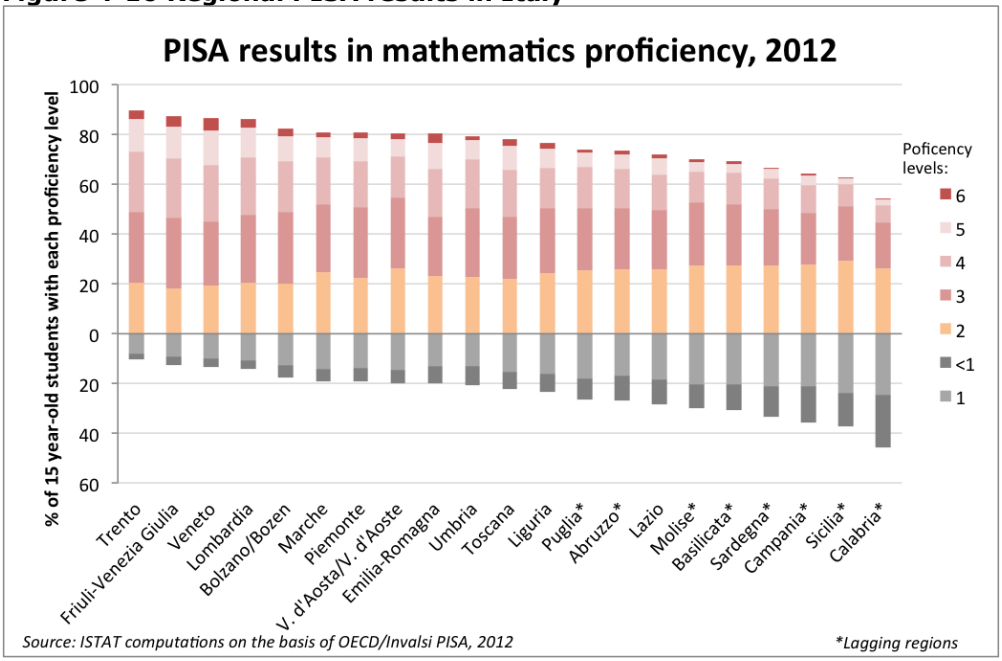
4.4.5 Skills – evidence from PIAAC and PISA

On the basis of Survey of Adult Skills data (PIAAC), McGowan and Andrews (2015a, 2015b) calculate the qualification and skills mismatch. Italy and Spain have the biggest reported percentage of workers with skills mismatch (30-35%). On the other hand Poland has low levels of skills mismatch. However, while in Spain as well as in Poland the main problem is over-skilling, in Italy skills mismatch manifests in both over- and under-skilling The economic impact of over- and under-skilling is different: companies with over-skilled workforce may gain in terms of higher productivity at the firm level, the overall impact on the economy may be different due to misallocation of resources (sub-optimal allocation of resources) and a 'talent waste'. The under-skilling is detrimental for both firms with under-skilled workforce and the economy as a whole. Interestingly, while in Spain mismatch between education and the labour market needs is visible both in qualification and skills mismatch, in Italy observed qualification mismatch is much lower. This suggests that while in Spain the over-skilling and over-qualification are closely linked (workers find job below their formal qualification/educational attainment), in Italy educational system does not provide workers with adequate skills: workers seems to lack skills they should have acquired in the course of formal education. The studies provide evidence that simulated productivity gains from reducing skills mismatch would be the most significant in Spain and Italy.

PISA review provides information on the quality of education in terms of skills acquired. It measures proficiency levels in mathematics, reading and science. It measures proficiency levels in mathematics, reading and science. PISA 2012 results reveal that Bulgaria and Romania have the highest percentage (above 30%) of 15-year old students with proficiency level below 2 in mathematics, reading and science. Hungary and Greece score particularly low in mathematics and science. Italy, Portugal and Spain are in the range of 20-25%. In respect to PISA results Poland outperforms other lagging counties the rates in all dimension are below 15%.

Regionalisation of PISA results for Italy show that lagging regions perform much worse than the country average in reading, math and science (ISTAT). Figure on the left present the results in mathematics in Italian regions. All Italian lagging regions have the biggest shares of students with the lowest proficiency levels in mathematics (up to more than 40% in Calabria) compared to best-performing Trento (ca 10%).

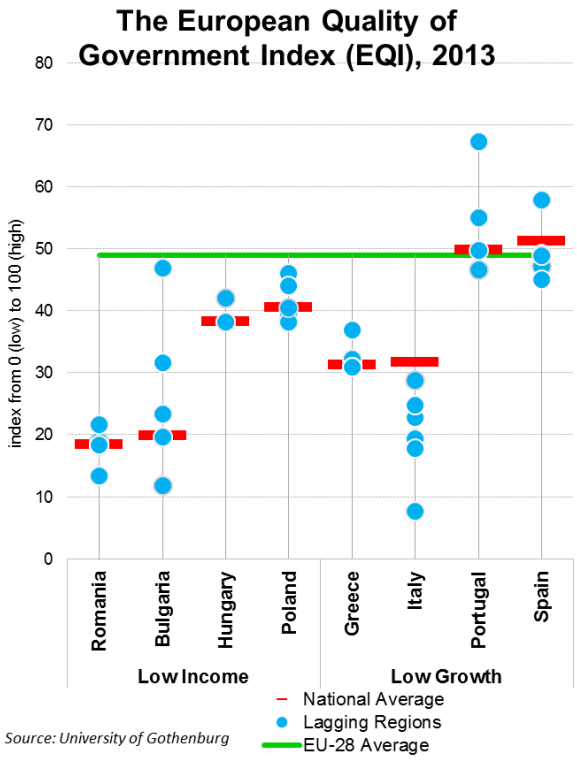
Figure 4-16 Regional PISA results in Italy



4.5 Quality of governance in lagging regions

Institutions are playing a key role in economic growth or stagnation (Rodrik et al., 2004; Kwok and Tadesse, 2006; Rodriguez-Pose, 2013). A plethora of data is available to measure quality of government and institutions in the EU at the national level. These cover aspects including public procurement, recently published by the European Commission as part of the EU single market scoreboard (European Commission 2015a), the effectiveness of Member States justice systems by the EU Justice Scoreboard (European Commission, 2016b) and the EU eGovernment project (European Commission 2016a). These national level data are very informative about the overall institutions performance of a country but give no insight into the within-country variation. The only data on the quality of government available at the sub-national level is the EU Quality of Government Index – QoG, published in 2010 and again in 2013 (Charron et al, 2012, 2013 and 2014). The research uncovered an important regional dimension that can partly explain the observed within-country divergences in economic performance.

Figure 4-17: European regional quality of government index



The QoG project measures good governance, across countries and regions via an index that captures multiple dimensions of the public sector. The QoG is based on an extensive survey covering the perceptions and experiences that citizens have with public sector services. It specifically measures the extent to which citizens feel their public sector services are not affected by corruption, are of a good quality and are allocated impartially (Figure 4-17). Among the countries with lagging regions, Bulgaria and Romania score lowest at the national level while Spain and Portugal record the highest national score. Greece and Italy score better than Romania and Bulgaria, but worse than Hungary and Poland. Only in Italy and Spain do all or almost all lagging regions score below the national average. The Campania region performs particularly poorly with QoG levels in line with the worst regions in Bulgaria and Romania. In the

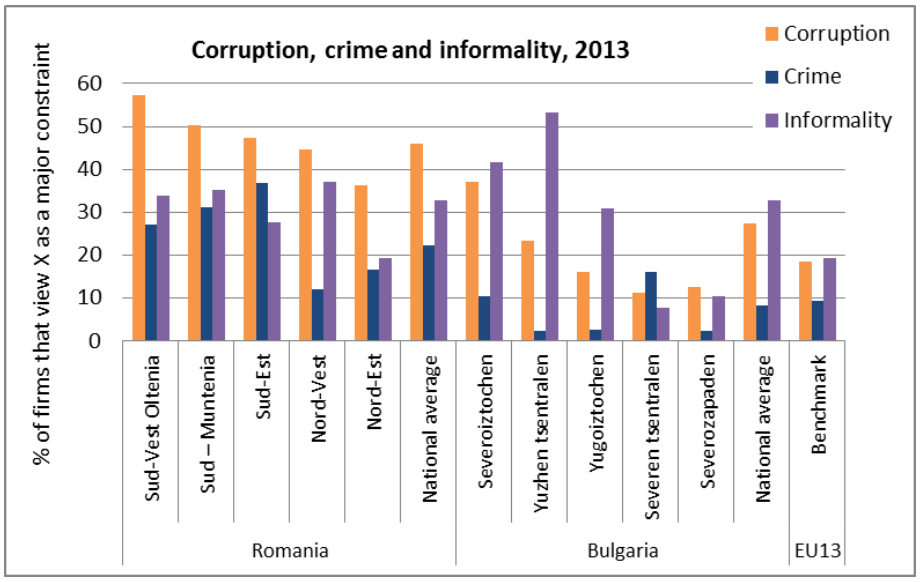
other countries some score above and some score below. In Greece and Hungary, only NUTS-1 data were available which reduces the number of observations.

4.5.1 Corruption and informal economy: evidence from World Bank Enterprise Surveys (BEEPs)

In Romania, enterprises see corruption, crime and the informal sector as more of a constraint on business activity than in the rest of the EU13. In 2013, the share of enterprises that considered corruption, crime and the informal sector as major constraints in Romania was twice the compared in the EU13. In three of the five Romanian low-income regions, both corruption and crime was seen as more of a problem than elsewhere in the country. The informal sector was also considered to be a more of a constraint in three low-income regions than in other parts of the country.

Corruption and the informal sector are regarded as much more of an obstacle for doing business in Bulgaria than in other EU13 countries. In 2013, nearly a third of one enterprise considered this a major problem. The situation is even more problematic in some of the lagging regions: Severoiztochen and Yuzhen Tsentralen for the informal sector and Severen tsentralen for corruption.

Figure 4-18 Corruption, crime and informality in Romania and Bulgaria, 2013



Source: World Bank, Applica, own elaboration

Administrative capacity and corruption

Inefficient public administrations, inefficient justice systems and a relatively high level of corruption remain a challenge in countries with lagging regions. The Cohesion policy is investing EUR 3.2 billion in strengthening institutional capacity and the efficiency of public administrations in these countries. Italy, Hungary, Romania, Greece and Bulgaria have set up dedicated programmes, which will increase the efficiency, transparency and accountability of civil services, foster e-government, reduce the administrative and regulatory burden on citizens and businesses, modernise public procurement and support anti-corruption measures. Bulgaria, Italy, Poland and Romania will finance judicial reform.

4.5.2 Enhancing efficiency of public administration in Italy

Italy will devote significant Cohesion policy resources to strengthen its administrative and institutional capacity. A specific programme of EUR 828 million will address the quality and efficiency of the public administration at national, regional and local levels and of the judicial system. It will reduce regulatory burdens, increase transparency and access to public data, and improve administrative procedures through online services and digital inclusion. Another specific

programme of EUR 378 million, targets the lagging regions Basilicata, Calabria, Campania, Puglia and Sicilia. It will support the public administration in its fight against corruption and organised crime, including through development of IT systems in the field of public procurement. Each region also developed a plan to reinforce the administration managing the EU Funds.

4.5.3 Strengthening Institutional Capacity in Bulgaria

The Bulgarian Strengthening Institutional Capacity (SIC) measures, as part of the programme dedicated to institutional capacity building, reduced administrative burden for citizens and businesses. For instance, the processing time for documents was shortened in starting a business and judicial procedures. Services were made more accessible through the introduction of on-line service delivery at various administrative levels. More than 108 administrations introduced systems for in-house electronic exchange of documents. SIC interventions also contributed to the better law and policy making through promotion of monitoring and evaluation culture.

Half of the Cohesion Policy resources and 19% of EU GDP[26] go through public procurement. Complex or frequently changing legislation, inadequate capacity of contracting authorities, poor oversight and lack of transparency cause irregularities, corruption, litigations and appeals. The most important challenges in the countries with lagging regions are linked to the introduction of e-procurement (Greece, Hungary, Italy, Romania), administrative capacity, training and staffing and ex ante controls (Romania, Bulgaria), lack of central coordination and governance (Romania, Italy).

4.5.4 Reforming public procurement in Portugal

In 2008 Portugal overhauled its national procurement system. The reform modernised and streamlined procedures, leading to a professionalised and centralised system. A key element was the adoption of an e-procurement system covering the entire chain. The reform reduced administrative burden, processing times and irregularities. It increased transparency, bolstered competition, improved data collection, strengthened monitoring and generated substantial budgetary savings. The success of the reform lies in its collaborative process, soliciting the perspectives of experts and practitioners and robust (3-year long) public debate. The 'ownership' created and the progressive implementation allowed for appropriate training, guidance and awareness raising campaigns.

Source: PwC, Public procurement – Study in administrative capacity in the EU, 2016

The best deterrent of corrupt practices is transparency, openness of data and an active civil society as a watchdog. The Cohesion policy introduced a number of transparency requirements including publishing information on beneficiaries online, e-tools like e-procurement and e-cohesion, the European Code of Conduct on the Partnership Principle as well as Integrity pacts – an initiative aimed at transparency and involvement of civil society.

4.5.5 Integrity pacts to enhance transparency and fight corruption

An integrity pact is an agreement between the contracting authority and the bidding companies that they will abstain from corrupt practices and will conduct a procurement process with integrity, and transparency. To ensure accountability, it includes a monitoring system led by a civil society organisation which brings credibility and legitimacy to the contracting process.

To promote integrity pacts the Commission and Transparency International launched a four-year pilot, which supports 17 Integrity Pact co-financed by the Cohesion policy in 11 Member States including Bulgaria, Greece, Hungary, Portugal, Romania, Italy and Poland. Civil society organisations will carry out quality assurance, disseminate the results and provide training on anti-corruption, transparency and access to information measures for contracting authorities, managing authorities, economic operators.

[26] Source: European Commission, Annual Public Procurement Implementation Review 2013.

4.6 Cohesion policy and national investments in lagging regions

4.6.1 Cohesion Policy investments

While total public and private investment were analysed in the chapter 2, this section analyses the investments of Cohesion Policy[27] in lagging regions and assesses its changes over time. For the low-growth regions, this section analyses three funding periods (2000-2020). As the low-income regions only joined the EU in 2004 and 2007, only the two most recent periods will be analysed. The funding has been grouped into three broad thematic groups: a) Infrastructure, b) Productive investment and c) Human capital to allow comparisons over the three periods.

The low-growth regions invested the biggest share of their funding in infrastructure, but this has steadily been reduced over time. In the period 2000-2006, it accounted for 56%, but it dropped to 43% and then 35% (Figure 4-19). The low-growth countries follow the general trend of Cohesion Policy in the EU-15, which also saw a shift away from transport infrastructure towards productive investment and human capital. This underlines how Cohesion Policy has changed in response to shifting investment needs and priorities.

Low-growth countries still invest a higher share of Cohesion Policy funding in transport than the EU-15 does. Greece and Spain consistently have a higher share of transport investments than the EU-15. Portugal had a share above the EU-15 average in 2000-2006, but dropped it well below the EU-15 average in the next two periods as it filled it is infrastructure gap.

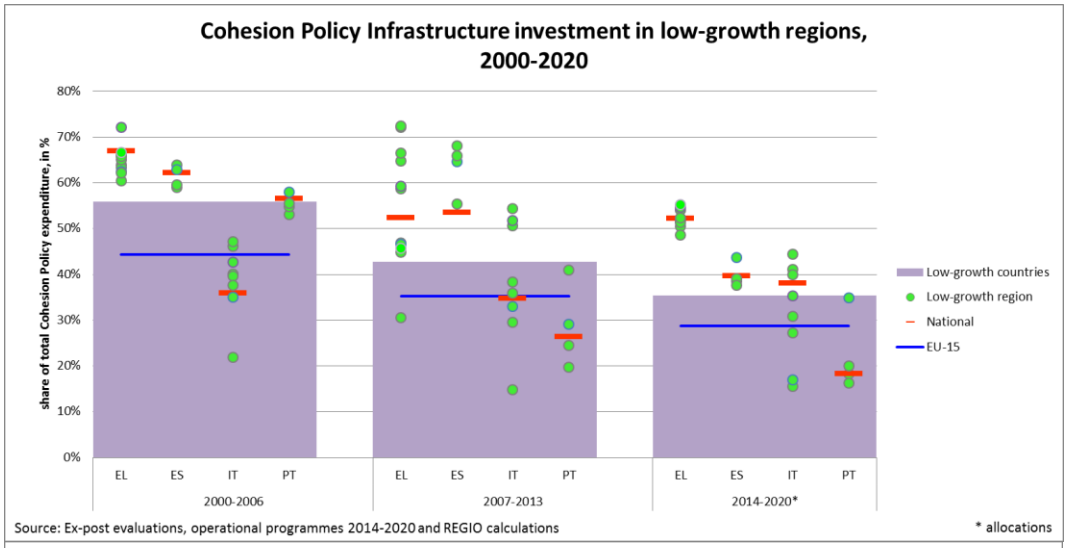
Low-income countries invest more in transport than the low-growth countries given they still have significant infrastructure needs. Low-growth countries invest more in productive investment as well as human capital (Figure 4-19), but less than the EU-15 average. Their different investment priorities are reflected in the different relevance given to specific sectors.

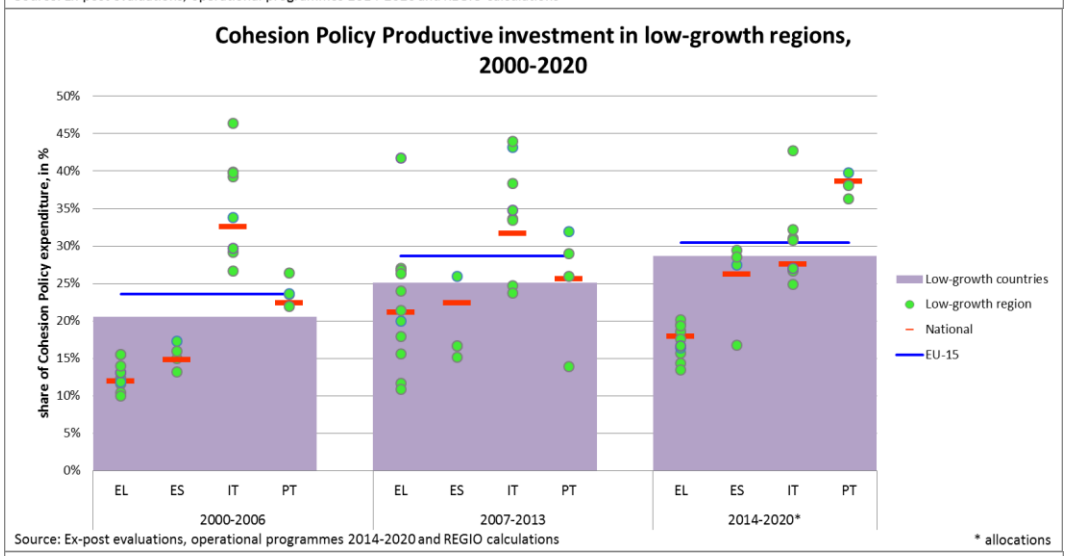
At the regional level the situation is just as heterogeneous. Compared to the EU-15 average, the majority of low-growth regions still invest more in transport in 2014-2020 and less in productive investments and human capital. Only Portugal's and a few of Italy's low-growth regions do not follow this trend.

Low-income regions present a more stable and homogeneous pattern, following their national and EU-13 trend. But a comparison across time at the regional level in low-income regions is challenging since the Bulgarian, Hungarian and Romanian 2014-2020 Operational Programmes cover more than one region. Preliminary data suggest that most of the low-income regions reduced the share of investment in infrastructure (except Romania) in 2014-2020 and dedicated more funds to productive investment and to human capital.

[27] For the periods 2000-2006 and 2007-2013, ex-post evaluations provide a regional and thematic breakdown of European Regional Development Fund (ERDF) and Cohesion Fund (CF). European Social Fund (ESF) expenditure was classified as human capital. For the period 2014-2020, the programmes provide a thematic breakdown of allocations (ERDF, CF and ESF). For the multi-regional programmes in 2014-2020, the allocations have been attributed on a per capita basis to each region.

Figure 4-19 Cohesion Policy investment in low-growth regions, 2000-2020





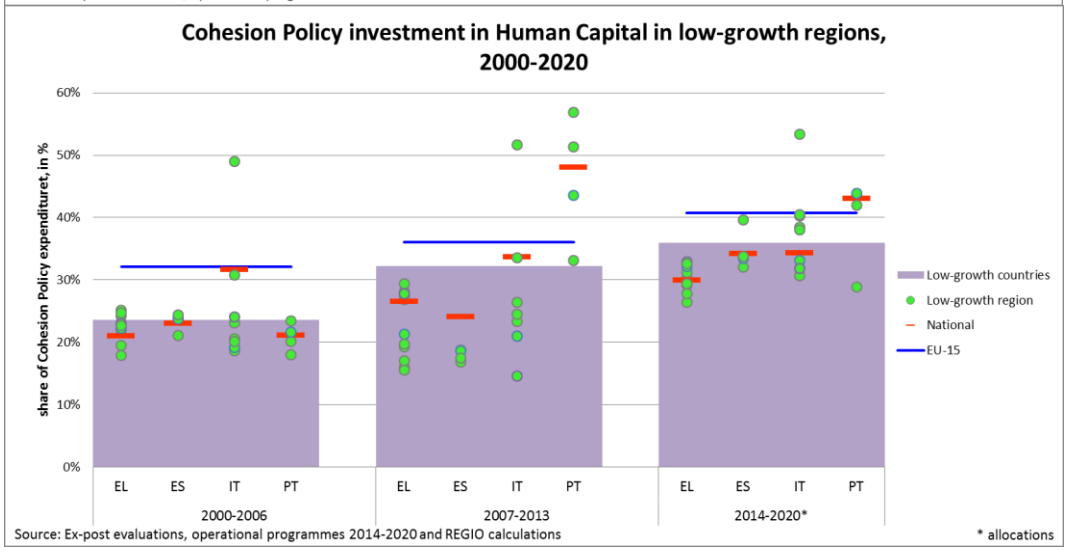
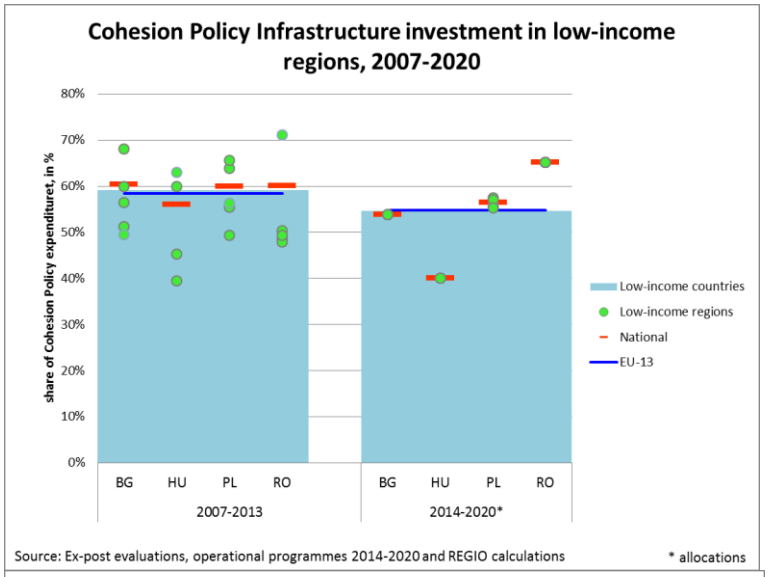
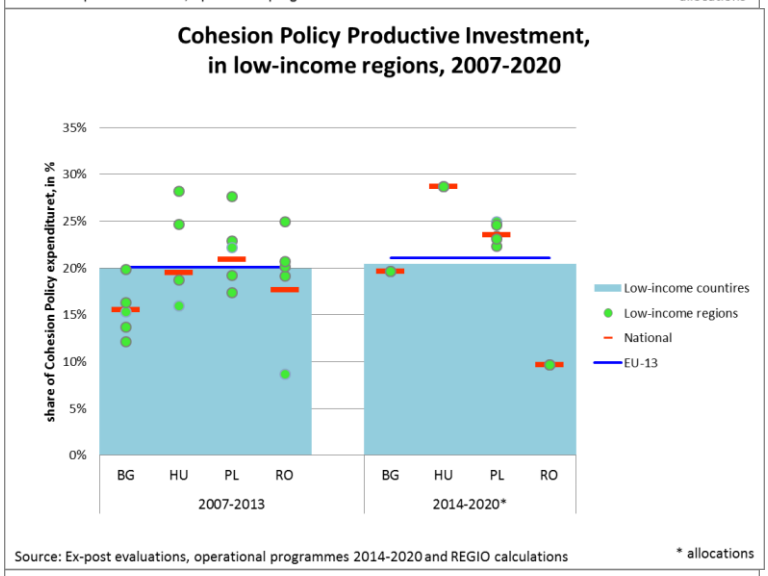
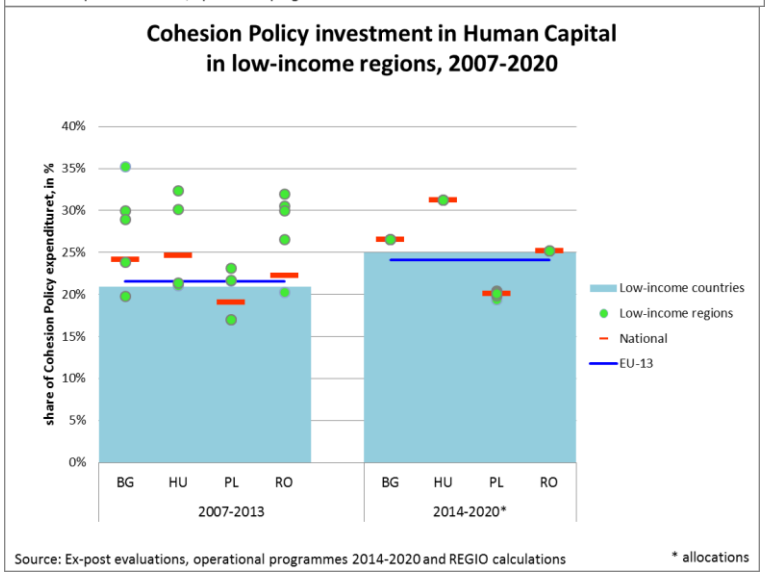


Figure 4-20 Cohesion Policy investment in low-income regions, 2007-2020



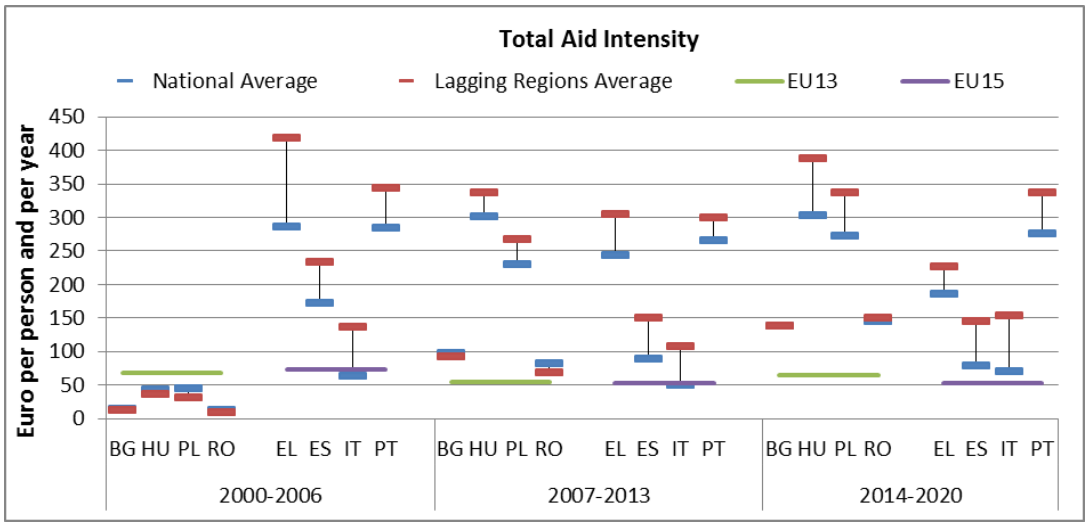




The above findings are corroborated by the absolute size of Cohesion Policy expenditure (see figures in annex). Low-growth regions investments per capita are still higher for transport in 2014-2020 compared to their national and EU averages, except Portugal's, which follows a different spending pattern. The trend between the three programming periods is however in favour of investments in human capital.

On the other hand, aid intensities are increasing in low-income regions reflecting the trend at the national level. Transport investments per capita have increased significantly in 2014-2020, but also expenditure in human capital and productive investments. Only in Polish lagging regions, aid intensities in productive investment are higher than those in human capital. In the other low-income regions, human capital investments per capita are higher than productive investment but lower than infrastructure investments per capita.

Figure 4-21 Aid intensities per programming period, 2000-2020



4.6.2 Impact of 2007-2013 Cohesion Policy on low-income regions

In low-income countries, capital city regions generally benefited from the largest share of Cohesion Policy expenditure in the country. For instance, the Warsaw region of Mazowieckie hosted almost 16% of total expenditure in Poland. The only exception is Romania where industrial regions of Centru and Vest benefited from a higher share of funding (respectively 15.2% and 15.4%) than Bucureşti – Ilfov (12.8%).

However, relative to the size of their regional economy, contributions of Cohesion Policy expenditure were much larger in lagging regions. For instance, in Bulgaria, Cohesion Policy expenditure only represented slightly more than 1.0% of the capital city region (Yugozapaden) GDP. In contrast, expenditure in low-income regions ranged from 1.4% of GDP in Severoiztochen to 2.2% in Yugoiztochen. The same pattern was observed in Poland (1.4% in Mazowieckie against 2.5% in Podlaskie, the Polish lagging region benefiting less from EU funding) and in Hungary (1.1% in Közép-Magyarország against 3.4% in Dél-Dunántúl).

Accordingly, in most low-income countries the impact of Cohesion Policy was the highest in the lagging regions. According to the RHOMOLO economic model, in Hungary's lagging regions, the impact at the end of the programmes' implementation (2015) ranged from 9.4% in Dél-Dunántúl (meaning that GDP of that region is 9.4% higher than what it would have been in the absence of the policy) to 7.8% in Észak-

Magyarország. In the other regions, it ranged from 2.4% in Közép-Magyarország to 5.3% in Közép-Dunántúl, much lower than in the lagging regions[28].

This pattern is found in all low-income countries except in Romania where the impact on Centru and Vest was higher than in most lagging regions. The impact on lagging regions still remains higher than in the capital city region of Bucureşti – Ilfov.

4.6.3 National investment strategies

The analysed countries have heterogeneous approaches towards their lagging regions. Amongst all eight countries Spain and Italy have the most federal structure with its regions enjoying a high degree of independence in policy-making. The other six countries tend to be more centralised, though to varying degrees. In Portugal, Poland, Romania and, given recent developments, also in Bulgaria, local governments tends to have a share in aggregate government investment (around 50%), while in Greece and Hungary much of the government investment is conducted by the central state. However only in Poland regions (NUT2 level) play a role in policy design.

There is a strong correspondence between the level of the regional autonomy and national policies regarding regional development. Among analysed countries only Italy and Spain have genuine national strategy for regional development, in terms of defining the policies strategically as well as in terms of financing. Italy has the most elaborated and institutionalised strategy (Pacts for the South) with a strong focus on its lagging regions. Spanish policy, because of the high degree of autonomy of the regions, operates mainly through re-distribution of funds from more developed to less developed regions (though because of the crisis this support decreased significantly). For the remaining countries EU Cohesion policy is the main tool for regional policy, though there are differences in relation to the 'regionalisation' of policy design.

Within EU Cohesion policy, the eight countries differ in the focus they give on regional development, especially with respect to the development of the lagging regions. Judging by the financial allocations made, Italy has the strongest focus of all countries, devoting a significant amount and share of its Cohesion policy resources to the lagging regions and developing region specific operational programmes (OPs). Spain's, Poland's and Portugal's ESIF strategies also have a strong regional focus, with Poland not only having separate OPs for all its regions but an additional OP specifically for Eastern Poland, taking account of the specific development needs there. In Romania, Bulgaria, Greece and Hungary, the ESIF related strategy is much more a sectoral strategy than a strategy specific to the individual regions' needs. Investment priorities are rather set according to a central rather than a specific regional plan.

In terms of priorities, Italy, Portugal, Spain, Hungary and Poland made competitiveness and employment the main aim of their strategies. By contrast, Greece, Bulgaria and Romania prioritise investment in environment and transport and energy infrastructure.

[28] The magnitude of the impact depends on a number of factors, including the amounts invested by Cohesion Policy in the region, its industrial fabric as well as its accessibility and connection to the EU transport network.

Table 4-1 Summary table: National policies towards lagging regions

	Centralised	Importance of national regional policy towards lagging regions	Importance of Cohesion Policy for lagging regions	Importance of Cohesion policy investment in government investment
Italy	Low	High	High	Low
Spain	Low	Medium	Medium	Low
Greece	High	Medium	Medium	High
Portugal	High	Low	Medium	High
Bulgaria	High	Low	Low	High
Hungary	Medium	Low	Low	High
Poland	Medium	Low	High	High
Romania	Medium	Low	Medium	High

4.7 Investment needs and drivers of growth in lagging regions

This section summarises the results of an econometric analysis (Rodriguez-Pose, Ketterer, 2016) related to the key drivers of growth and their relevance for low-income and low-growth regions between 1999 and 2013.

The results of the analysis are that the factors shaping the economic performance of low-growth and low-income regions differ considerably. This is a consequence of the heterogeneity among lagging regions in terms of economic structure and growth performance before and during the economic crisis.

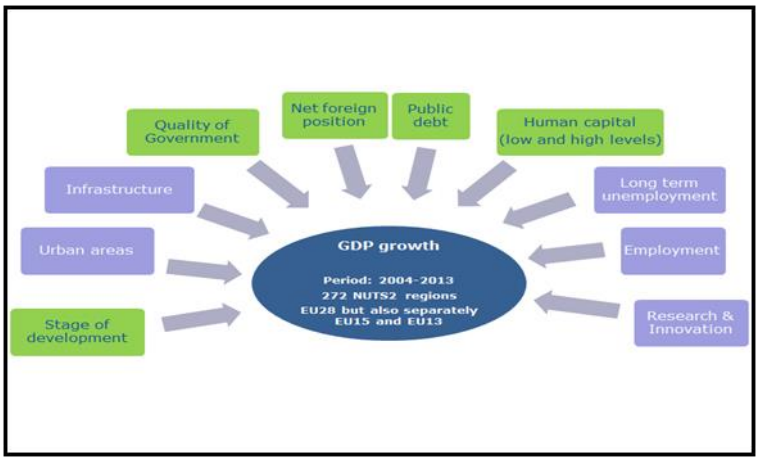
The analysis shows that in the **low-income regions** of Europe more traditional factors, such as a good human capital and innovation endowment and investments targeting improved accessibility are proving their worth as catalysts for growth. In these regions, strategic investments in infrastructure, in general, and in transport infrastructure, in particular, are likely to continue to contribute to economic development for some time. With still considerable deficits in basic infrastructure, improving accessibility in low-income regions becomes a precondition for economic development. Tackling the infrastructure deficit thus needs to feature prominently in the early stages of the strategy. However, it has to be noted that the returns of improvements in accessibility are likely to diminish as accessibility constraints become less important and the level of development improves. Consequently, any sort of infrastructure investment should be limited in time, respond to clear criteria of need and development potential, and be matched by similar efforts aimed at the enhancement of human capital and at tackling institutional bottlenecks.

The returns of such investments are much less evident in the **low-growth regions** given the endowment of their transportation network. The analysis unveils that low-growth regions stand to benefit much more from improvements in government quality. Low-growth regions which have witnessed limited improvement in the quality of government, have not been capable of making the most of development and Cohesion Policy intervention and, as consequence, have also grown less and have been more exposed to the negative consequences of the crisis. A sustained effort in order to address barriers in terms of government effectiveness, transparency and accountability is needed if the low-growth regions are to experience both sustainable levels of development and greater convergence to the rest of the EU.

The analysis also points in the direction that human resources and the skilling of the labour force as a prominent element of any development strategy for **lagging regions**. The human capital deficit of low-income regions and the low degree of redeployment of the workforce are important problems limiting the innovative and 'absorptive' capacity of the region.

4.7.1 Main determinants of regional growth

Figure 4-22 Growth determinants in lagging regions



The analysis of growth determinants (Annoni, Catalina-Rubianes, 2016) corroborates to a large extent the results of econometric analysis outlined above.

It confirms that the stage of development, quality of government and human capital are the most relevant factors behind economic growth in Europe (green colour on the chart).

In relation to **human capital,** it reveals that reducing the number of lowly educated weighs more than increasing the number of tertiary educated persons. The positive effect on economic growth of highly educated is stronger in less developed regions of the EU13 (including low-income regions) than in the EU 15. **Innovation** (measured by a robust set of underlying indicators) proves to matter more in regions close to the productivity frontier. For the majority of regions, technology adoption and/or absorption are more important (The *innovation puzzle* - OECD 2012). **Quality of government** is a highly differential and strongly stimulating growth factor in the EU 15 (the group includes low-growth regions) and neutral in the EU 13. The neo-classical growth model hypothesis on initial level of development is confirmed. Finally, **macroeconomic factors**, net foreign position and public debt, are highly significant for sustainable GDP growth.

4.8 Conclusion

This chapter analysed the investment needs and the growth determinants in lagging regions. It reveals significant differences between the two groups of regions, but also some similarities.

The low-growth regions are gaining population, while the low-income regions are losing population, but both are still urbanising. GDP and employment growth in the metro regions in both types of lagging regions was higher than in their respective country. This underlines the growing importance of cities as economic engines of lagging regions. Linking these cities better to the surrounding areas can help to improve the overall performance of these regions.

Low-growth regions score well in terms of accessibility. Their access to airports is good and often better than the EU average. Road investments have improved their accessibility to their optimal level (or even beyond). Rail is the only transport mode where the low-growth regions score less well.

The low-income regions still have significant infrastructure gaps and hence investment needs. Improving the road network and completing the TEN-T can substantially increase their accessibility. Their access to airports is low, in part due to the poor road network. Train departures are few and fast ones are almost non-existent.

Innovation in lagging regions is limited. All the regions have a share of tertiary educated well below that of the EU and of their country. Private R&D is very low, with

few exceptions. Overall, innovation is slightly better in the low-growth regions, but their performance has been slipping, while that of the low-income regions has been improving. This shows that the upskilling of the labour force is needed to promote growth. As part of the implementation strand, support to set up smart specialisation strategies was provided to lagging regions.

Quality of government is below the EU average in almost all lagging regions. The lagging regions in Bulgaria, Italy and Romania score very poorly. In the low-growth regions, quality of government is a serious obstacle to growth and without improvements in the low-income regions it will start to limit growth soon as well. This underlines that both types of regions need investments in administrative capacity.

Cohesion Policy has evolved since 2000. In the low-growth regions, the share of funding dedicated to transport has dropped in every programming period. On the other hand, the shares dedicated to productive investment and human capital have increased over time. In the low-income regions, not much has changed between 2007-2013 and 2014-2020 with a strong focus on transport infrastructure investments. As the quality and quantity of transport infrastructure in a region catches up with the rest of the EU, its investments can focus more on innovation, education and other productive investments. With its integrated approach Cohesion Policy delivers mix of interventions reflecting regional context.

5 Conclusions

This report analysed the investment needs and growth determinants in low-income and low-growth regions and their macro-economic framework and structural reforms.

Cohesion Policy plays an important role in all these regions and in most regions accounts for a very high share of their public investment. The ex-post evaluations of the period 2007-2013 have shown the many positive impacts of Cohesion Policy on SMEs, skills, transport, social infrastructure, energy efficiency and the environment.

As the low-growth regions caught up with the rest of the EU in terms infrastructure provision, their Cohesion Policy investments shifted from infrastructure to human capital and to productive investments. As the low-income regions reduce their infrastructure deficit, they would also benefit from shifting away from infrastructure spending to investing more in entrepreneurship, education and innovation.

These changing needs and investments priorities underline that moving to the next level of economic development cannot be accomplished by a one-size-fits-all policy. It will require regionally differentiated investments and policy responses.

Basic endowment shortages are still a big barrier to development in low-income regions. As a result, investments that improve physical and digital accessibility can increase the competitiveness of low-income regions. In low-growth regions, Cohesion Policy in the previous periods virtually closed the gap with the EU in terms of physical accessibility. As a result, investment in these domains is unlikely to have a significant impact on competitiveness, although it may contribute to other goals.

Human resources and the up-skilling of the labour force are important for growth in both the low-income and low-growth regions. The human capital deficit in lagging regions is important not just per se, but also because they limit the innovative and 'absorptive' capacity of the region. Policies should focus both on improving the skills of those without an upper secondary education and on boosting tertiary education.

Low-income and low-growth regions are more vulnerable to a poor economic framework and a lack of structural reforms as their labour market performance and business dynamics tend to be poor. As a result, private, national and EU investments in these regions could have a bigger multiplier effect if the macroeconomic framework improved and more structural reforms were implemented. In particular, the low-growth regions have suffered due to the macroeconomic imbalances built up before and during the crisis years.

Improving the business environment usually requires regulatory changes at the national level combined with investments in regional and local administrative capacity.

Improving the quality of government can have multiple benefits from a more efficient business environment, to better public services and to improved regional development strategies. Our analysis indicates that the quality of governance and institutions is the main obstacle to development in the low-growth regions. If the quality of government in low-income regions does not improve, it will also put a break on development when these economies need to transition to higher value added economy. Improving government efficiency and transparency is slow and challenging process and should be a continuous focus.

In conclusion, comprehensive and well-timed development strategies are therefore needed not only address some of the basic problems of lagging regions, but also to enhance their capacity to adopt new technology, retain and attract talent, generate and stimulate new investments, and, last but not least, make the most of the economic potential across the whole of the EU.

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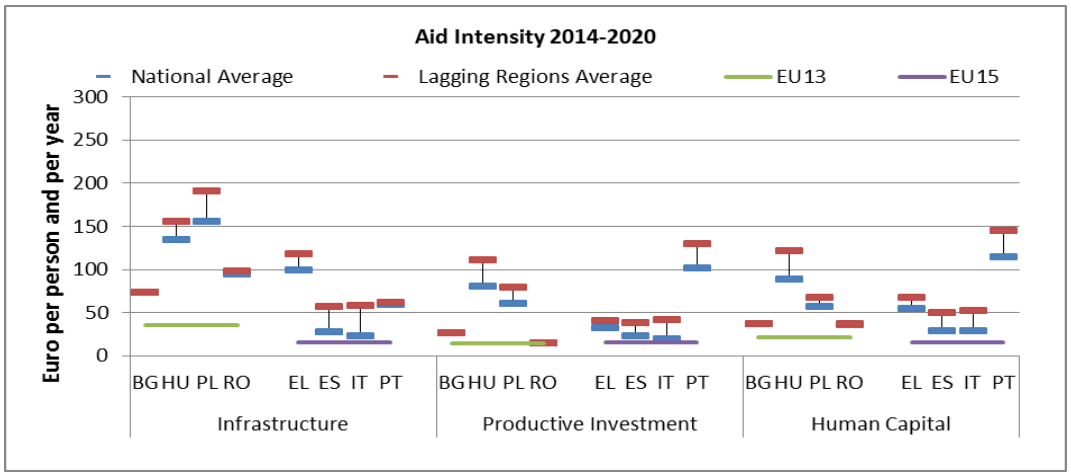
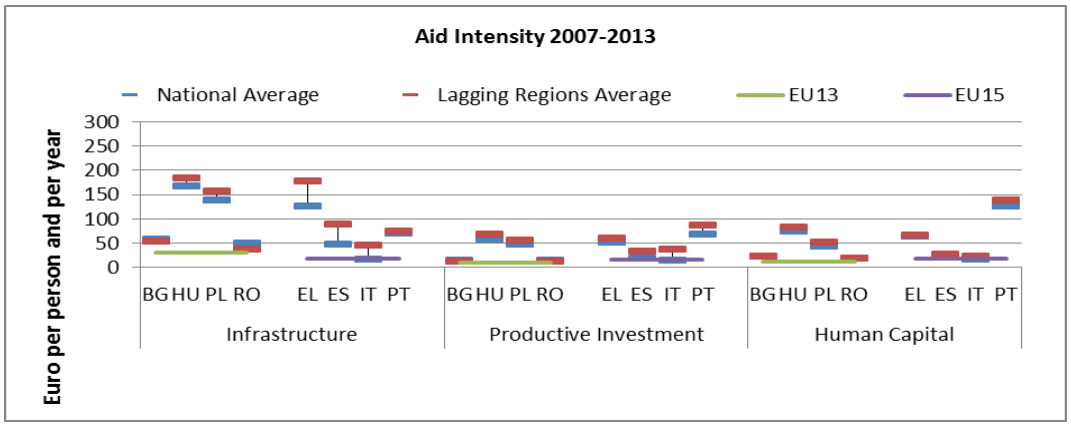
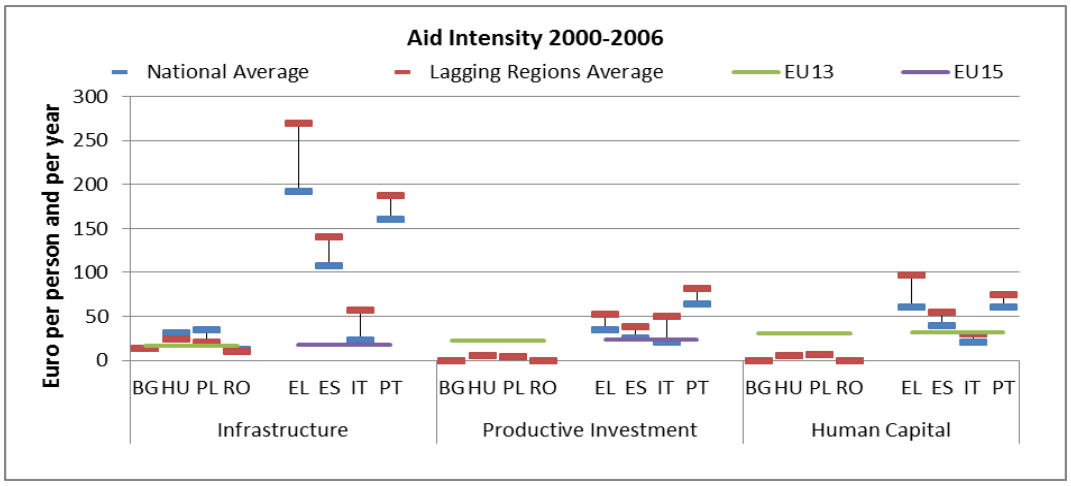
7 Annex

Figure 7-1 Aid intensities per sector, 2000-2020





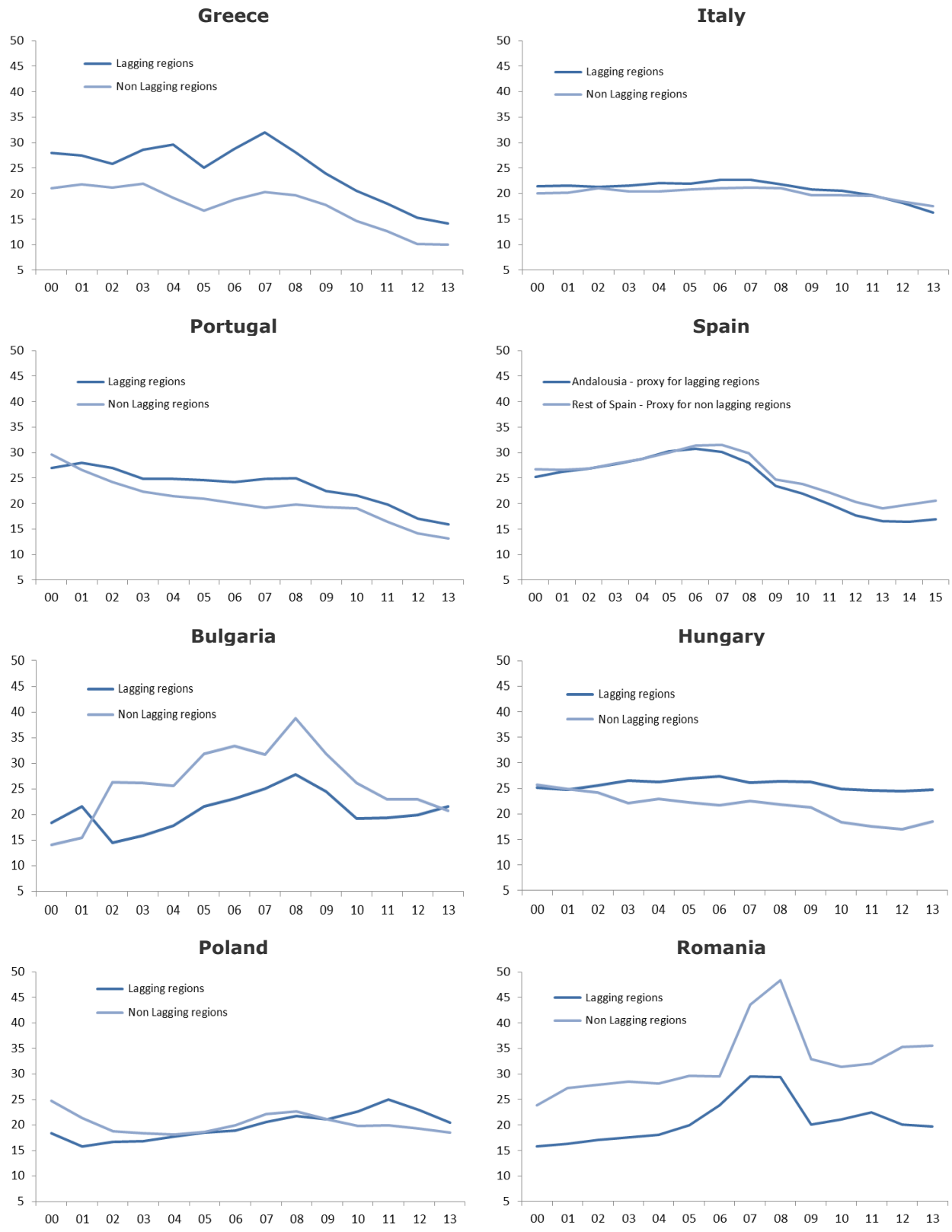


Source: DG REGIO. Data relate to average annual aid intensities in EUR per inhabitant.

Figure 7-2 Cohesion policy allocations 2014-2020 as a percentage of GDP and per inhabitant

Annual average allocations as % of GDP and annual average aid intensity (€/inhabitant/year, current prices) for the Investment for Growth and Jobs Goal 2014-2020										
	Cohesion Fund		**Less Developed Regions**		**Transition Regions**		**More Developed Regions**		**Total**	
	% of GDP	Aid intensity	% of GDP	Aid intensity	% of GDP	Aid intensity	% of GDP	Aid intensity	% of GDP	Aid intensity
BG	0,71	42,7	1,60	95,4					2,31	138,1
EL	0,25	41,5	1,90	239,7	1,15	168,4	0,37	81,9	1,21	204,0
ES			1,71	285,3	0,82	156,4	0,20	53,7	0,38	91,5
IT			1,05	192,0	0,29	64,8	0,08	28,3	0,27	78,3
HU	0,78	85,7	3,70	300,8			0,13	22,8	2,77	305,9
PL	0,76	87,0	2,08	215,3			0,56	103,9	2,50	287,1
PT	0,22	38,5	2,29	333,3	0,59	108,3	0,24	57,8	1,64	284,9
RO	0,62	46,1	1,78	108,3			0,30	56,9	2,00	149,0
EU28	**0,58**	**69,8**	**1,74**	**202,6**	**0,32**	**79,7**	**0,07**	**26,7**	**0,33**	**97,0**

Figure 7-3 Investment rate by type of region (GFCF in % of GDP)



Source: Eurostat, Institute of Statistics and Cartography of Andalusia and own calculation

Table 7-1 List of lagging regions

Lagging regions code	Lagging regions name	Category: low income or low growth
BG31	Severozapaden	Low income
BG32	Severen tsentralen	Low income
BG33	Severoiztochen	Low income
BG34	Yugoiztochen	Low income
BG42	Yuzhen tsentralen	Low income
EL51	Anatoliki Makedonia, Thraki	Low growth
EL52	Kentriki Makedonia	Low growth
EL53	Dytiki Makedonia	Low growth
EL54	Ipeiros	Low growth
EL61	Thessalia	Low growth
EL62	Ionia Nisia	Low growth
EL63	Dytiki Ellada	Low growth
EL64	Sterea Ellada	Low growth
EL65	Peloponnisos	Low growth
EL41	Voreio Aigaio	Low growth
EL43	Kriti	Low growth
ES42	Castilla-la Mancha	Low growth
ES61	Andalucía	Low growth
ES62	Región de Murcia	Low growth
ES64	Ciudad Autónoma de Melilla	Low growth
ES70	Canarias	Low growth
HU23	Dél-Dunántúl	Low income
HU31	Észak-Magyarország	Low income
HU32	Észak-Alföld	Low income
HU33	Dél-Alföld	Low income
ITF1	Abruzzo	Low growth
ITF2	Molise	Low growth
ITF3	Campania	Low growth
ITF4	Puglia	Low growth
ITF5	Basilicata	Low growth
ITF6	Calabria	Low growth
ITG1	Sicilia	Low growth
ITG2	Sardegna	Low growth
PL31	Lubelskie	Low income
PL32	Podkarpackie	Low income
PL33	Swietokrzyskie	Low income
PL34	Podlaskie	Low income
PL62	Warminsko-Mazurskie	Low income
PT11	Norte	Low growth
PT15	Algarve	Low growth
PT16	Centro	Low growth
PT18	Alentejo	Low growth
RO11	Nord-Vest	Low income
RO21	Nord-Est	Low income
RO22	Sud-Est	Low income
RO31	Sud - Muntenia	Low income
RO41	Sud-Vest Oltenia	Low income