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Sixth report on economic, social and territorial cohesion: Investing in Europe's Future

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Box: Common transport policy contributes to cohesion and regional development, by improving accessibility

A fully integrated Single Market is not possible without good connections between the various parts. However, connections which cross national borders are still lacking in many cases, especially in the central and eastern Member States, dividing the centre of the EU from the periphery and hampering the further development of intra-EU trade.

The Common Transport Policy is aimed at developing affordable, competitive and energy-efficient modes of transport that can help to reduce the peripheral nature of regions located far from the centre of the EU, as well as the development of lagging regions with poor endowment of transport networks and high transport costs. It includes the development of Short-Sea Shipping, 'Motorways of the Sea', Inland waterways and the more efficient use of existing railways.

The TEN-T¹ consists of two layers: a core network to be completed by 2030 and a comprehensive network feeding into the core network, to be completed by 2050. The core network will provide essential support for the single market by facilitating the flow of goods and people around the EU, including in the less developed Member States (see map). It involves connecting 94 main European ports to rail and road links, 38 key airports with rail connections into major cities, 15.000 km of railway lines upgraded to high speed and 35 cross-border projects to reduce bottlenecks.

A new financing instrument, the Connecting Europe Facility² (CEF) will support the implementation of the TEN-T, by tripling the budget for transport infrastructure in the 2014–2020 period to EUR 26 billion, which will serve as 'seed capital' to stimulate further investment by Member States.

Experience shows that TEN-T infrastructure funding tends to have a strong leverage effect. For the next programming period, every EUR 1 million of EU funding is expected to generate around EUR 5 million from national governments or, if innovative financial instruments are used, up to EUR 20 million from the private sector.

10.3. Low speeds and low frequencies of trains in central and eastern member states limit their appeal compared to the car.

Since the 1970s, the share of passenger km travelled by train has declined as more and more people have switched to using cars. In two areas, however, rail offers an attractive as well as more resource-efficient alternative to car or air travel: medium-distance journeys and commuting to work. Conventional railways can shorten door-

¹ Regulation of the European Parliament and of the Council on Union Guidelines for the development of the trans-European transport network, entered into force on 1 January 2014

² The Regulation of the European Parliament and of the Council establishing the Connecting Europe Facility also entered into force on 1 January 2014.

to-door journey times of up to 350 km as compared to air travel and high-speed rail is faster for journeys up to 800 km.

The high-speed rail network (HSL) has expanded continuously. Between 1990 and 2009, lines on which speeds can exceed 250 km per hour increased from 1,000 km to 6,000 km. Over this period, passenger km travelled on these lines increased from less than 20 billion a year to almost 100 billion³. By 2030, if completed, the planned high-speed TEN-T would extend to over 30,000 km.

There are major differences between regions, however, in the extent of both high-speed rail networks and conventional ones. In Belgium, France, Spain, Germany, Italy and the UK, large sections of the conventional rail network have been upgraded for use by high-speed trains together with new high-speed rail lines being constructed (Map).

France, Belgium, Sweden and Finland have the most km of railway lines per head of population with trains operating at speeds of over 120 km per hour. A large number of these were financed with the support of the ERDF, the Cohesion Fund, the TEN-T allocations and grants from the EIB.

Despite the significant investment in the modernisation of the rail network, there are still regional networks where train speeds are less than 120 km per hour. These are mainly in the Baltic States, Poland, Hungary, Romania, and Bulgaria (see Map). Moreover, in few areas, such as central Poland, speeds have fallen since 1990 (Maps ...and figure...).

The ability of railways to offer an attractive alternative to travel by car depends not only on the speed but also the frequency of trains. The average number of trains per day on rail routes in almost all the regions in the Baltic States, Poland and Ireland was less than 25 in 2010 (See map), or less than one an hour each way. With such low frequencies, most people who can afford to use a car will do so. In contrast, in Netherlands and Denmark, the average number of trains per day on the TEN-T core lines was 130 or more, which means much less waiting time, better connections and overall a more attractive offer.

The TEN-T Guidelines set out the aim of having a true EU-wide multimodal network, including railways, by building new infrastructure but also by improving existing infrastructure. The importance attached to sustainable and cleaner modes of transport, such as rail, is reflected in the aims of the Connecting Europe Facility and in the Cohesion Fund priorities for investment in transport.

³ European Commission, 2009, *European high-speed rail — An easy way to connect* (http://ec.europa.eu/transport/wcm/infrastucture/studies/2009_03_06_eu_high_speed_rail.pdf).

Figure 1 - Railway length per capita with trains operating over 120 km/h, 2013

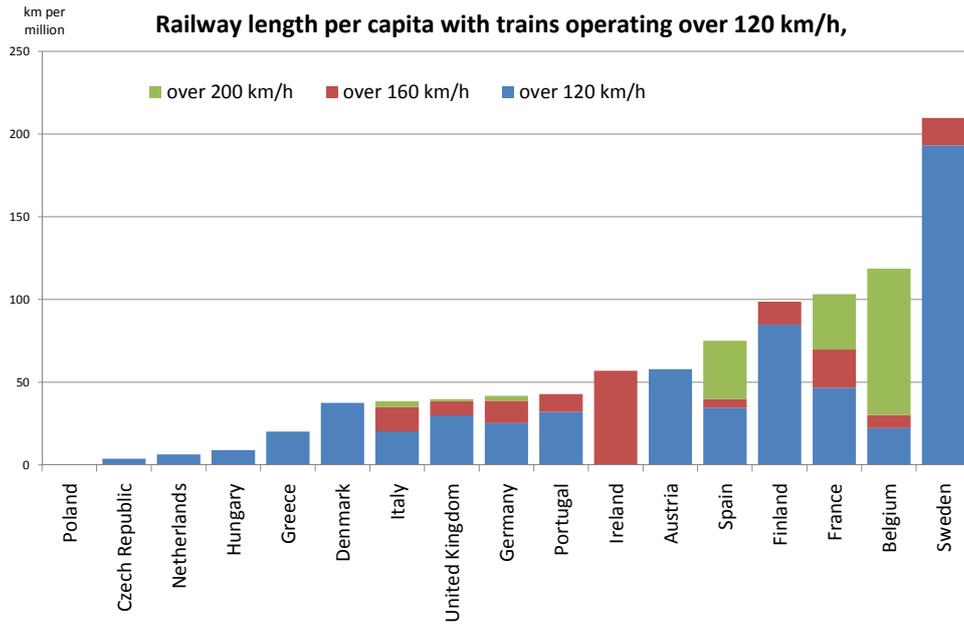
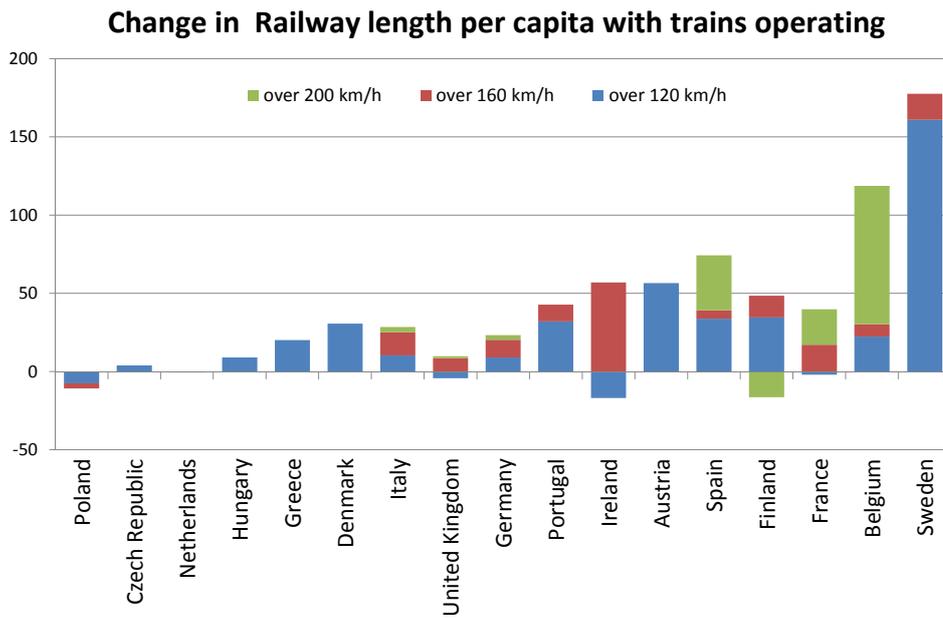
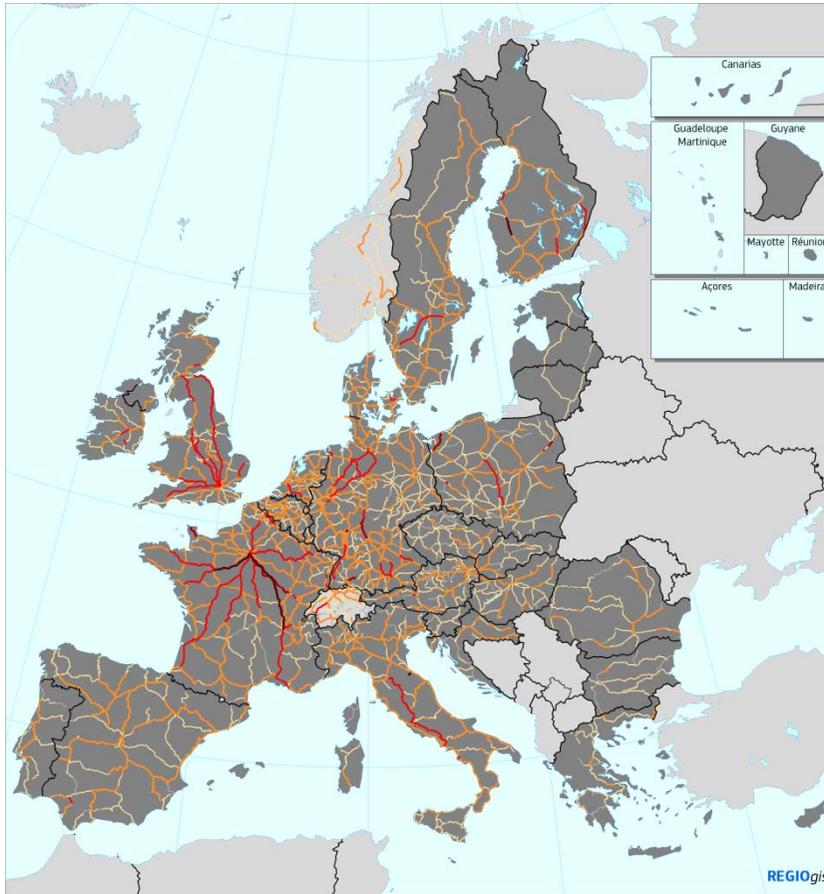


Figure 2– Change in Railway length per capita with trains operating over 120 km/h, 1990-2013



Map 1 Highest speed on railway network, 1990



Highest speed on railway sections according to timetables, 1990

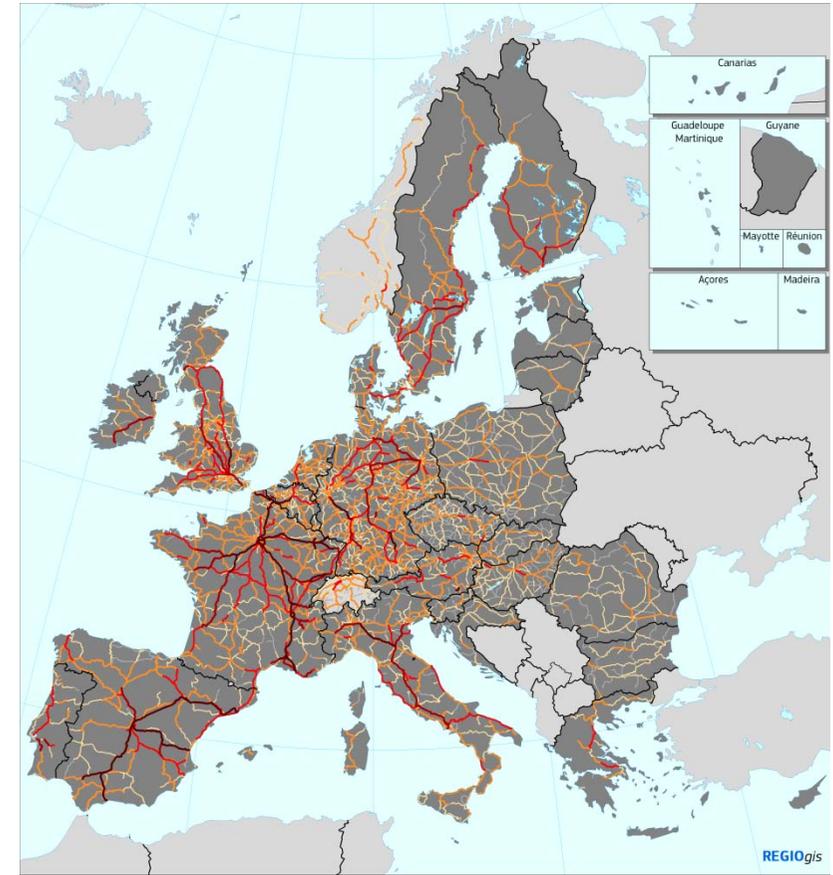
- km/h
- <= 50
 - 51 - 80
 - 81 - 120
 - 121 - 160
 - 161 - 200
 - 201 - 320

Since different train services with different speeds may operate along rail sections, the shown speeds indicate the average speed of the fastest train service. Rail sections exclusively for freight services are not shown. Source: RRG GIS Database, Railway company's timetables

0 500 Km

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Map 2 Highest speed on railway network, 2013



Highest speed on railway sections according to timetables, 2013

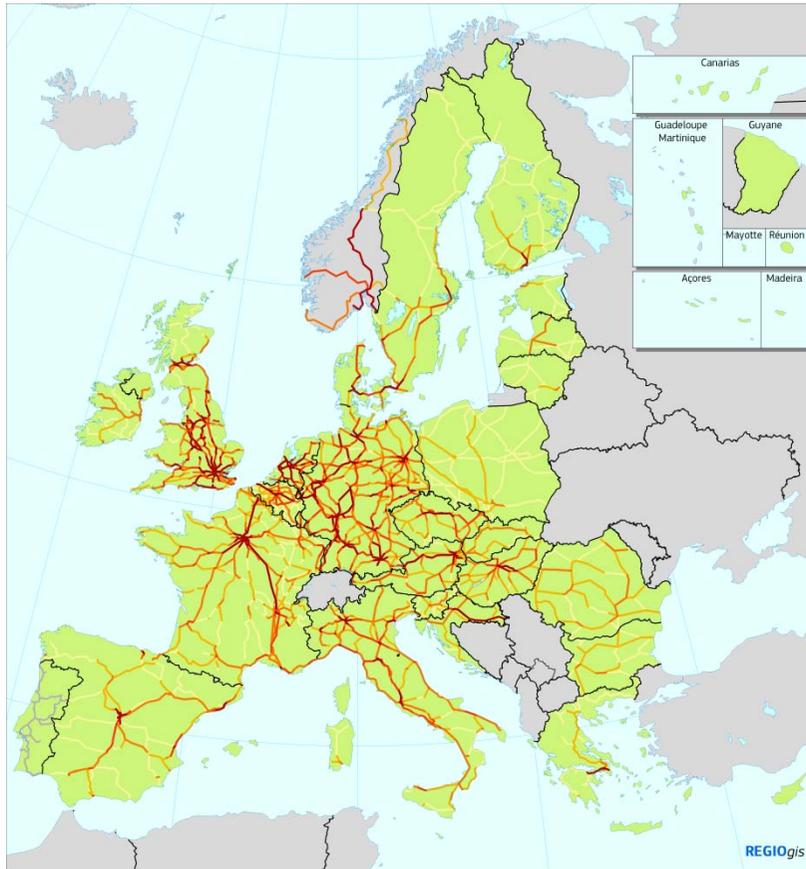
- km/h
- <= 50
 - 51 - 80
 - 81 - 120
 - 121 - 160
 - 161 - 200
 - 201 - 320

Since different train services with different speeds may operate along the same rail sections, the speeds shown indicate the speed of the fastest train service. Rail sections exclusively for freight services are not shown. Source: RRG GIS Database, Railway company's timetables

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Map 3 Passenger trains on TEN-T railway network, 2010



Passenger trains on the TEN-T railway network, 2010

Average number of trains per day

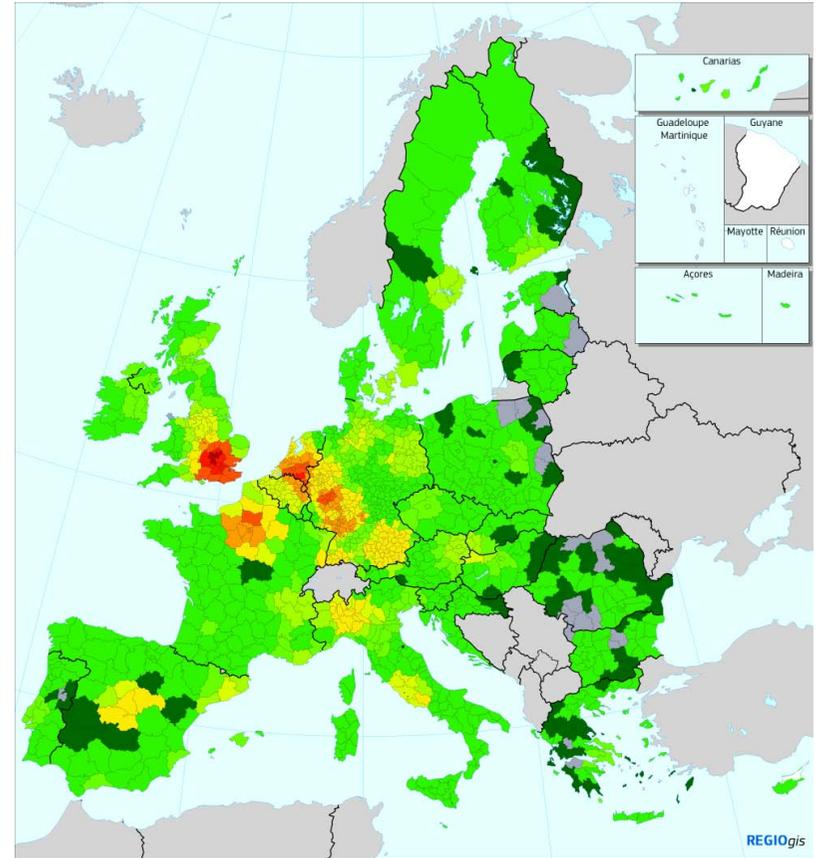
- 0 - 25
- 26 - 50
- 51 - 100
- 101 - 150
- > 150
- no data

Sources: Eurostat, DG MOVE, DG REGIO

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Map 4 Access to passenger flights, 2011



Accessibility to passenger flights, 2011

Number of passenger flights per day

- travel time to nearest airport > 90min.
- < 10
- 10 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1500
- 1500 - 2000
- 2000 - 2500
- 2500 - 3000
- > 3000
- no data

Population-weighted average number of flights
Sources: Eurostat, EuroGeographics, LandScan, REGIO-GIS

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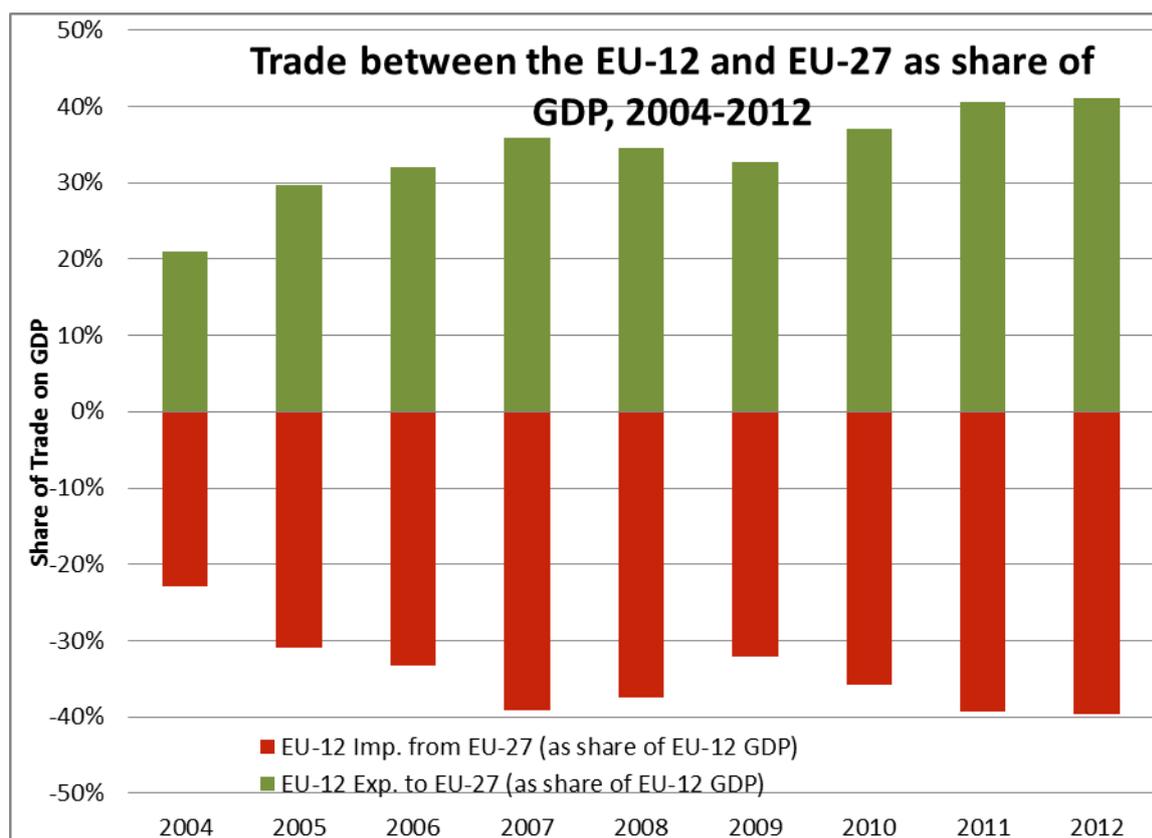
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Access to passenger flights is greatest close to the major airports of London, Paris, Frankfurt and Amsterdam (at over 2000 flights a day) (see Map). In the EU-15, virtually all regions have access to more than 10 flights a day within a 90 minute drive. This is not the case in Romania, Bulgaria, Poland, Estonia and Latvia, in part because the road network is of low standard, but also because of the limited demand for flights in and to some of the regions.

11. TRADE AND FOREIGN DIRECT INVESTMENT STIMULATE GROWTH IN THE EU-12

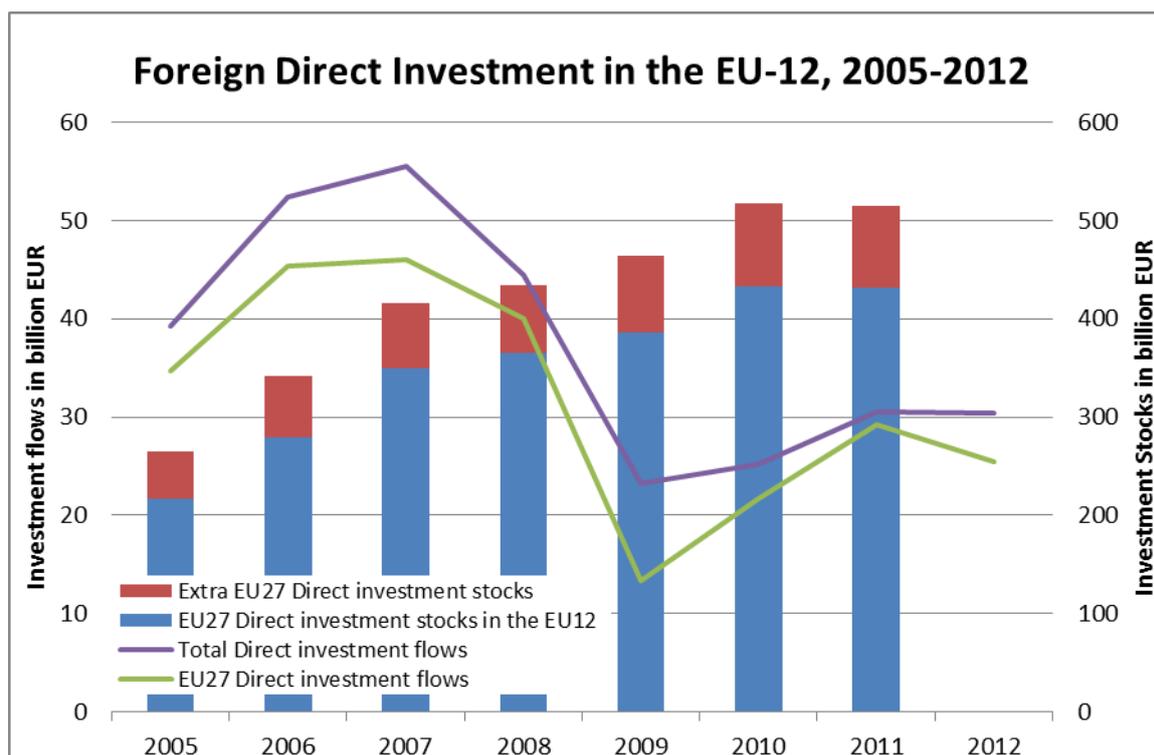
Although Cohesion Policy was created in part because of concern about the impact of the single market on less developed regions, the integration of the central and eastern countries has generated a strong growth of trade with the EU15 as well as between themselves. In 2004, imports from, and exports to, the EU-27 both amounted to around 20% on average of the GDP of these countries. This figure has risen substantially since, with a small dip in 2008 and 2009 due to the crisis. In 2012, these import and export flows both represented 40% of their GDP, a doubling in 8 years. This rapid integration into the single market has enabled these economies to specialise and become more productive leading to higher growth rates in both the countries concerned and the EU as whole.

Figure 3 Trade between EU-12 and EU-27, 2004-2012



Foreign direct investment (FDI) has also provided an important boost to the EU-12 economies. Most of this has come from other Member States. The crisis, however, has reduced investment flows markedly. In 2007, the EU-12 received 55 billion EUR from FDI; in 2009 this had fallen to 23 billion EUR. Since then flows have increased to around 30 billion EUR in 2012, but are still much smaller even than in 2005.

Figure 4 FDI in the EU-12, 2005-2012

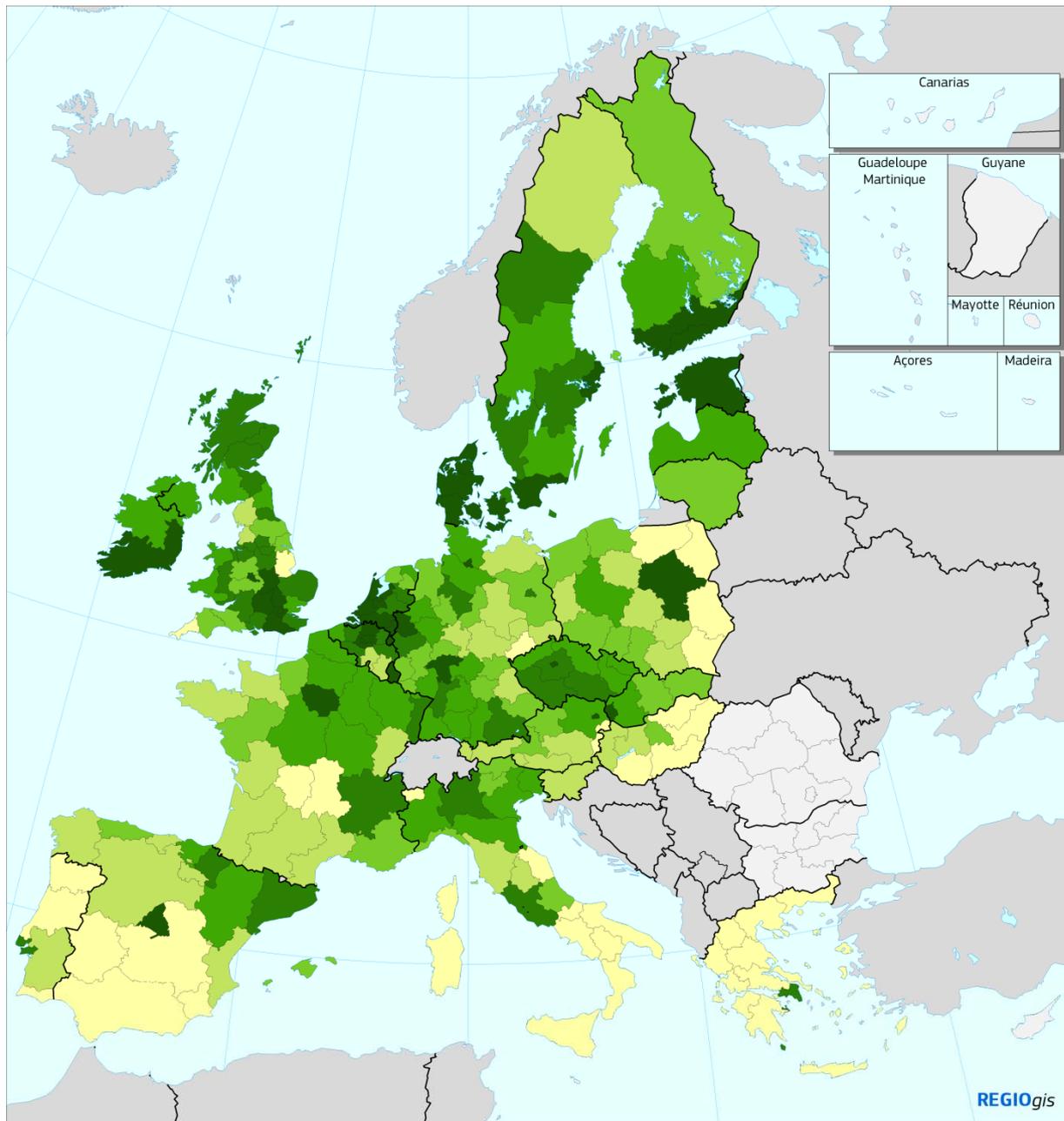


In all EU-15 and EU-12 Member States, the capital city region has a relatively large, often the largest, share of employment in foreign firms. Its greater accessibility, the concentration of head offices of large companies there and the good links to the national market tend to attract firms in business services especially.

Regions close to internal EU borders tend also to have a larger share of employment in foreign firms than others (see Map). This is especially the case for manufacturing companies for which proximity to the rest of the EU internal market is likely to be important.

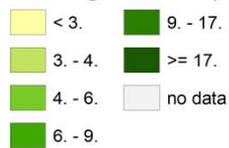
Many in southern Italy, southern Spain, northern Portugal, eastern Poland and eastern Hungary as well as most Greek regions have a relatively small share of employment in foreign firms. Although these regions tend to be some distance away from the largest part of the single market, which is a possible explanation, this has not prevented equally distant regions in Ireland, the Nordic countries and the Baltic States to have much larger shares of employment in foreign firms.

Map 5 Employment in foreign firms, 2010



Employment in foreign firms, 2010

Percentage of total employment excluding agriculture



Estimated values: DED4,DED5,DEE0,DK, F11B,F11C,UKD6,UKD7 and UKM regions..

Source: Weterings et al, 2011



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12. REGIONAL COMPETITIVENESS PRODUCES LIMITED REGIONAL SPILL-OVERS IN EU-13

The Regional Competitiveness Index (RCI) is designed to capture the different dimensions of competitiveness at the regional level. It is based on 73 mostly regional indicators that are relevant for competitiveness (Annoni et al 2013⁴).

There are eleven ‘pillars’ which are grouped into three sets.

- The basic pillars: (1) the Quality of Institutions, (2) Macro-economic Stability, (3) Infrastructure, (4) Health and (5) Quality of Primary and Secondary Education. These pillars are most important for less developed regions.
- The efficiency pillars: (6) Higher Education and Lifelong Learning (7) Labour Market Efficiency and (8) Market Size. These are important for all regions.
- The innovation pillars: (9) Technological Readiness, (10) Business Sophistication and (11) Innovation. These are important for intermediate and especially for highly developed regions.

To take account of the level of development of a region, the weights for each set depend on the GDP per head of the region (Table 23).

Figure 5: Weights used in the regional competitiveness index 2013

GDP per head (PPS) 2009 in (EU-28=100)	Basic	Efficiency	Innovation	Total
<50	35.00	50	15.00	100
50-75	31.25	50	18.75	100
75-90	27.50	50	22.50	100
90-110	23.75	50	26.25	100
>110	20.00	50	30.00	100

The index is applied to a modified set of NUTS-2 regions to try to avoid functional economic areas being divided across multiple regions. NUTS-2 regions have been combined for the functional economic areas of London, Brussels, Amsterdam, Vienna, Prague and Berlin.

The index provides an assessment of where competitiveness varies substantially within a country. It reveals that competitiveness has a strong regional dimension, which is important because many of the factors of competitiveness are influenced by regional and local authorities.

The index can also be a useful tool for EU Member States with large variations in regional competitiveness to consider to what extent this is harmful for their national competitiveness and whether it can be reduced, possibly with the support of Cohesion Policy. For example, the gap between the capital city region and the second most

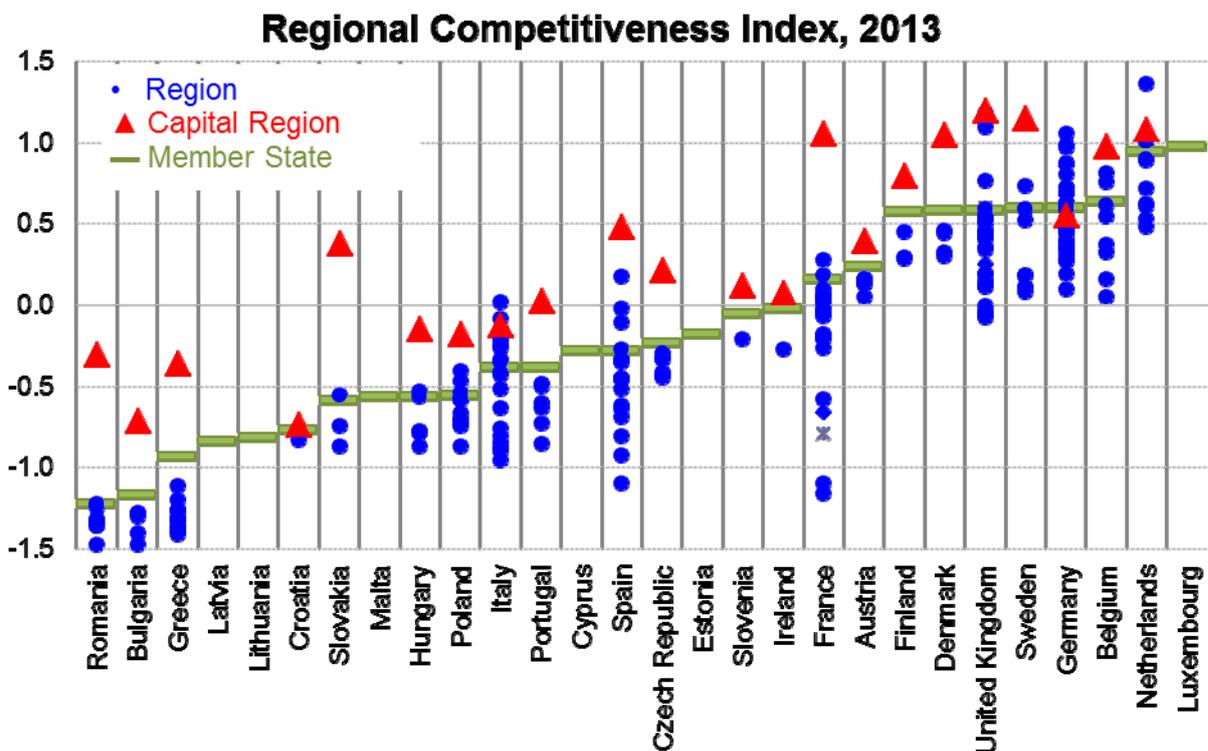
⁴ Annoni P. and Dijkstra L., 2013, *EU Regional Competitiveness Index, RCI 2013*, JRC Scientific and Policy reports, Publications Office of the European Union, 2013 ISBN 978-92-79-32370-6, , doi: 10.2788/61698

competitive region in Romania, Slovakia and France is very wide, while competitiveness in Germany does not differ markedly between regions.

The lack of regional spill-overs, in particular around the capital cities of some of the less developed Member States, was already noted in the 2010 edition of RCI., The 2013 edition confirms that being close to a competitive region in developed countries tends to improve the competitiveness of a region, but this is not the case in less developed Member States. The overall competitiveness of a country depends on the performance of all its regions and not just on that of the capital city region. Improving the business environment, providing an efficient transport network and good access to broadband in other regions might help to reduce the gaps in competitiveness.

The index reveals substantial differences in competitiveness in many countries (see figure). In France, Spain, the UK, Slovakia, Romania, Sweden and Greece, the variation across regions is particularly large with the capital city region almost always being the most competitive. In Italy and Germany, however, the capital city region is not the most competitive.

Figure 6 - Regional competitiveness index, 2013



Earlier territorial research highlighted the existence of what was called the ‘blue banana’, an area extending from greater London all the way to Lombardy passing through the Benelux countries and Bavaria, as well as a pentagon formed by London, Paris, Milan, Munich and Hamburg. These areas were seen as having the highest concentrations of economic activity. This line of research emphasised a strong core-periphery pattern of economic activity in Europe.

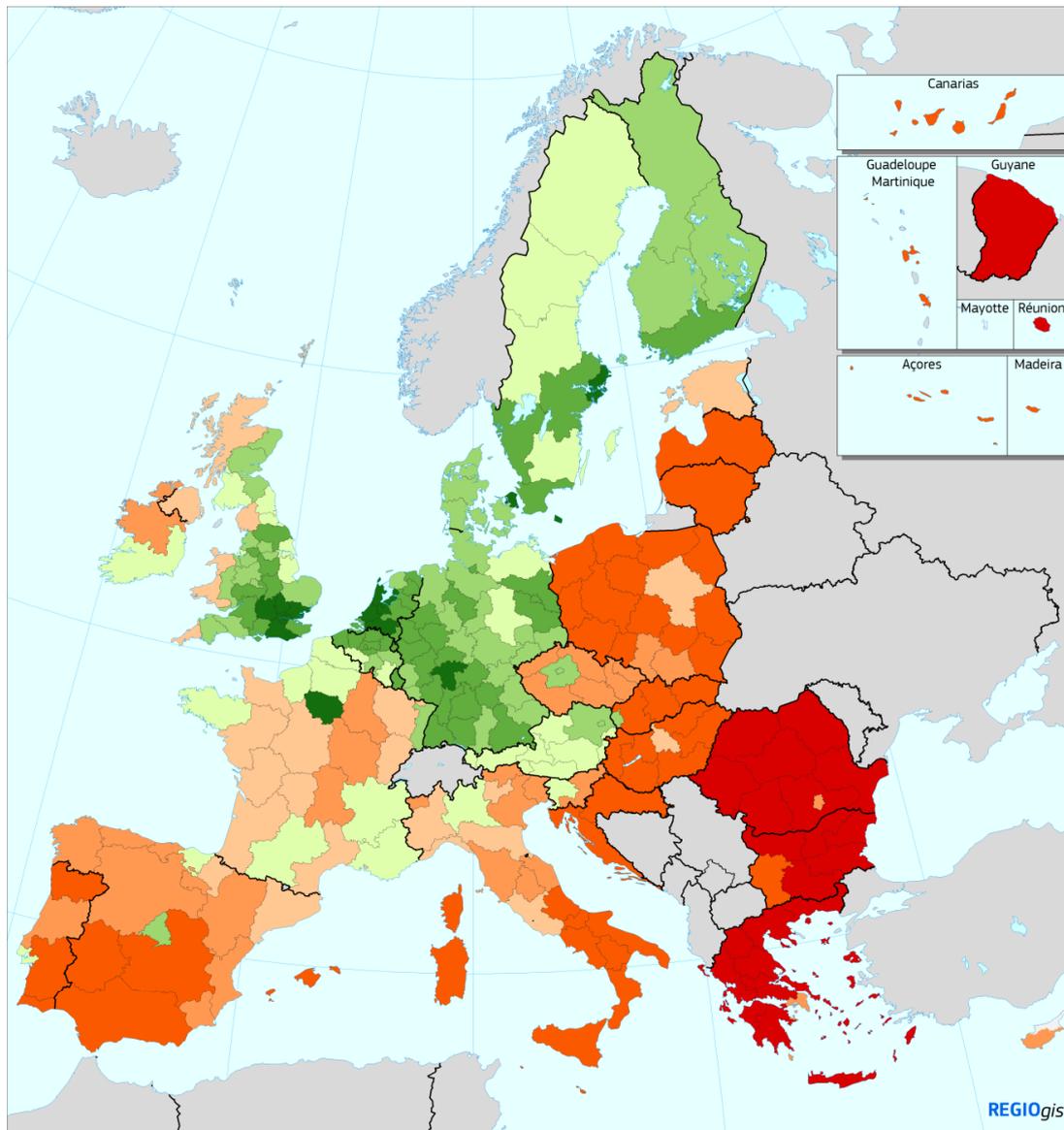
The RCI, however, shows a more polycentric pattern with strong capital city and metropolitan regions in many parts of the EU. For example, Stockholm, Copenhagen, Helsinki, Berlin, Prague, Bratislava and Madrid, which fall outside the areas distinguished above, all have a high level of competitiveness (see map). The RCI also

shows that, in some countries, all regions have a high level of competitiveness, while in others, it is only the capital city region.

Eight out of the top-ten regions in 2010 were also in the top 10 in 2013. The most competitive region in both years is Utrecht in the Netherlands, while the London functional economic area and Berkshire, Buckinghamshire and Oxfordshire in the UK, the Amsterdam functional economic area and Zuid-Holland also in the Netherlands, Hovedstaden (which includes Copenhagen) in Denmark, Stockholm and Île de France (the Paris region) were in the top ten in both years too.

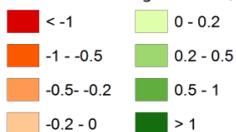
Cohesion Policy has helped to improve the competitiveness of many regions through for example, investment in innovation, education, health, accessibility and IT.

Map 6: Regional Competitiveness index, 2013



Regional Competitiveness Index - RCI 2013

Index: values range for low (negative) to high (positive)



Source: Joint Research Centre and DG for Regional and Urban Policy

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13. CONCLUSION

Cohesion Policy plays a key role in boosting smart growth in EU regions, especially in lagging ones. Smart growth is needed to compete in the global market. The co-financing of investment in innovation and support of SMEs can improve the competitiveness of the EU and its regions. The investment in transport, energy and digital networks helps to make the single market run more smoothly. It has facilitated an increase in trade between the EU-15 and EU-12 and stimulated foreign direct investment in the latter.

This chapter has shown the extent to which less developed parts of the EU have been able to catch-up with the rest in terms of GDP per head and indicated the factors responsible for this. Although regional disparities were tending to narrow in the years leading up to the global recession, this and the prolonged crisis which followed put an end to the process of convergence with rapid increases in unemployment in most regions but in the weaker ones especially.

The crisis has tended to hit the rural regions harder than others, with reductions in employment in the EU-15 being moderated by reductions in productivity but not in the EU-13 where losses in employment have been larger than elsewhere. On average, metropolitan regions have resisted the crisis better than others, particularly capital city regions in the EU-15.

The crisis affected construction and manufacturing in particular, with both employment and GVA in the former declining substantially. While employment has also declined in manufacturing, GVA increased between 2008 and 2013 in the less developed Member States.

Innovation has increased, but it remains spatially concentrated. Given the positive externalities of concentrating technological innovation in particular places, this is in many ways desirable. Nevertheless, innovation, broadly defined to include the take-up and adaptation of new technology and know-how developed elsewhere, remains crucial to stimulating growth in all regions.

The proportion of population with tertiary education has risen significantly over time and the Europe 2020 target of 40% of those aged 30-34 having this level of education is likely to be reached, yet significant disparities remain across regions. The proportion of people participating in lifelong learning, however, is well below the target, especially in central and eastern EU regions.

The gaps in the digital and transport networks are being filled. Broadband availability is close to 100% in nearly all regions, but access to the next generation of links to the internet is largely limited to the most urbanised areas. Southern Member States have invested heavily in road, rail and air transport over the past 25 years or so, with substantial support from the ERDF and Cohesion Fund, and now have networks on a par with those in the more developed Member States. In central and eastern countries, however, more remains to be done to improve both the rail and road network, which will also help to make the airports there more accessible.

Trade and foreign direct investment, although affected by the crisis, have made a substantial contribution to growth in the EU-12 underlining the benefits of joining the single market.

The regional competitiveness index, which attempts to synthesise all this information, shows that regions in the EU-15 with a large city, usually, but not always, the capital, have the highest levels of competitiveness and that proximity to such a region tends to boost the competitiveness of others. In the EU-13, on the hand, the region in which the capital city is located is always the most competitive but this has not (as yet) boosted the competitiveness of neighbouring regions. As these countries develop, and the economic and transport connections between the capital and the other regions become stronger, spill-over effects are likely to emerge with growth spreading out to other regions and reducing the gap with the capital city region.

Although Cohesion Policy has helped the EU and its region to promote smart growth, many more challenges lie ahead with several decades of investment necessary to complete the single market and the core trans-European networks and reduce large economic disparities between regions.