

EUROPEAN REGIONAL DISPARITY: BORDERS STRIKE BACK

3.1 Introduction

The original premise of the Single Market was that the promotion of economic integration would bring prosperity to the European Union, lower income disparities across member states, and by reducing differences between member states and within regions, it would enhance social and political cohesion within Europe. However, five years after the eruption of the European government debt crisis, the economic disparities feel larger than ever, the forces of economic integration seem to be weaker than before and social cohesion also appears to be crumbling. Do national borders matter more to economic outcomes since the crisis?

This chapter explores this issue by analysing the pattern of the evolution in regional GDP per employee on the one hand, and unemployment on the other. The evidence suggests that regional disparities decreased significantly before the financial crisis both in terms of GDP per employee and unemployment. In addition, these regional disparities became less and less national, thus, over time country level differences contributed less and less to regional differences. However, this trend appears to have reversed since the beginning of the crisis: country-specific effects now matter more than before. In other words, borders are back.

3.2 The age of convergence: disappearing national borders

The first crucial question concerning regional disparities is whether they have declined in the European Union. Prior to the crisis there was a strong sense that disparities are declining. This section presents some basic facts about regional disparities in the European Union, focusing on labour productivity and unemployment. The findings do indeed suggest a decline in disparities, but they also indicate that there were signs

of potential problems a few years before the crisis started.

3.2.1 GDP per employee

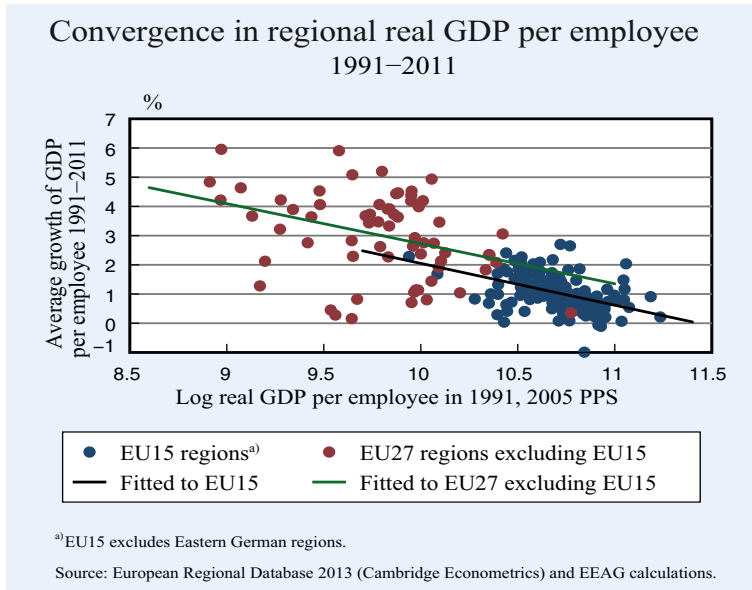
There are several ways to present GDP data to illustrate disparities in GDP across space over time. Figure 3.1 below illustrates what happened to GDP per employee in the European Union. We think that using GDP per employee is more appropriate at the regional level than the more frequently used measure of GDP per capita. This is because population and employee levels are much less correlated at a regional level than at a country level due to commuting. For example, the population of the region of inner London is much lower than its number of employees. Hence the focus of our analysis is GDP per employee, that is, labour productivity. We use these two terms interchangeably.

Firstly, we present the classic graph on the relationship between initial productivity levels and subsequent growth to see whether there was a stronger tendency towards low-productivity regions growing faster than high-productivity ones during the period 1991–2011 (β -convergence). Secondly, we plot the standard deviation of log real GDP per employee to see whether the dispersion of GDP per employee distribution decreased over time (σ -convergence).¹

Figure 3.1 shows the EU27 regions where the horizontal axis shows the productivity level in 1991 and the vertical axis represents subsequent average growth over a 20 year period. The figure also indicates whether a region belongs to an old member state (EU15) or to a new member state (EU27 excluding EU15). The figure suggests the presence of β -convergence as less productive regions tend to exhibit higher labour productivity growth than the more productive regions. Moreover, regions of the new member states grew faster than old member states' regions as their initial labour productivity was lower. It is also important to

¹ See Barro (2012) for a recent overview of the empirics of convergence, and Gennaioli et al. (2015) for an application to regional convergence.

Figure 3.1

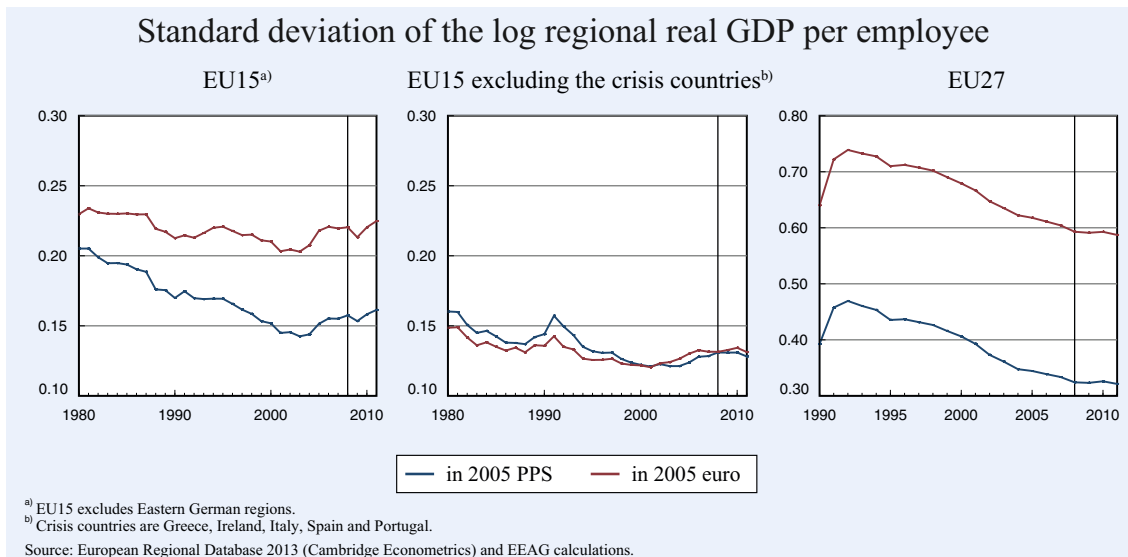


point out that the slopes of the fitted regression lines indicate that the slopes, and thus the speed of convergence, for both groups of countries are roughly the same.² The strong convergence of the new member states suggests that old and new members belong to the same convergence club.

Next we use the standard deviation of the log real GDP per employee to characterise the overall change in disparities among European regions (σ -convergence). The left side of Figure 3.2 shows the indicator

² This simple figure shows unconditional β -convergence. Including additional specific country factors may not change the speed of convergence, but may well change the intersection of the fitted line with the horizontal axis that indicates the long term relative productivity levels at which both the old and new member states grow at the same rate.

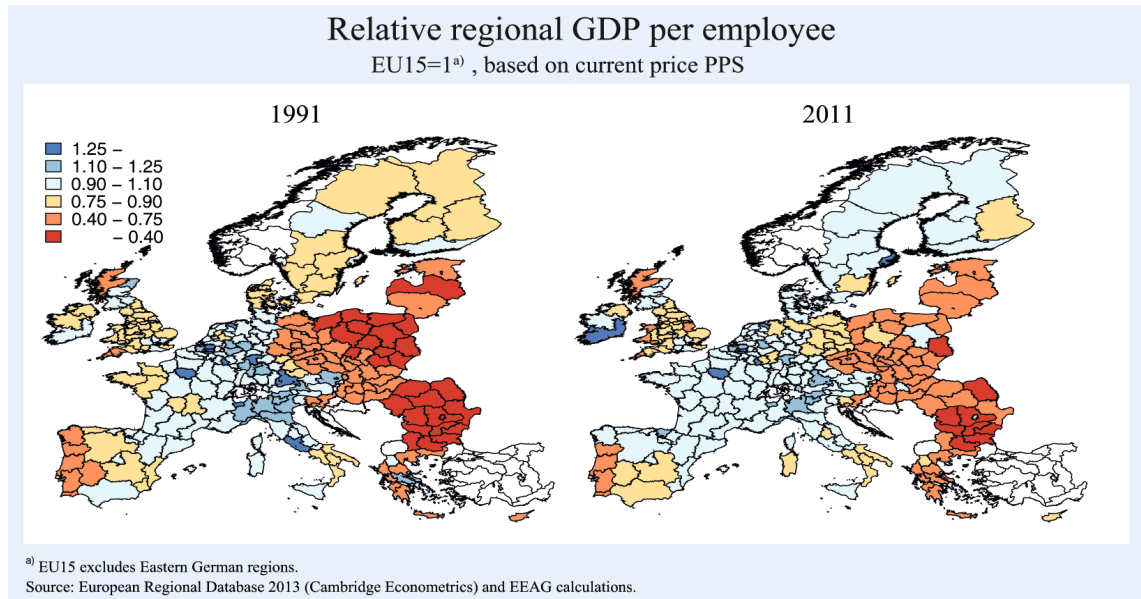
Figure 3.2



for the old member states, whereas the right side of the figure shows the data for regions of the old and new members together. The graph in the middle shows the indicator for the old member states without the crisis countries (without Greece, Ireland, Italy, Spain and Portugal). We expressed GDP both in the purchasing parity standards of 2005 (PPS) and in euros of 2005 when we calculated real GDP per employee. The time evolution of both indicators is very similar: they show a secular decline in disparity until about 2005. There is one important difference between the left and the right hand side

graph that is worth mentioning. The disparity in labour productivity among the regions of old member states (EU15) increased after the mid-2000s. By contrast, the disparity among the regions of old and new member states (EU27) declined as of the mid-2000s. The perceived effect of the crisis is that it has increased disparities among the regions of Europe along several dimensions. Figure 3.2 suggests that the increase in disparities in labour productivity started several years earlier. However, although disparity grew due to an increase in disparity both in crisis and non-crisis EU15 countries, a comparison of the left hand side graph and the middle graph strongly suggests that the bulk of the increase in disparity was due to the crisis countries. Some regions of Italy started falling behind,

Figure 3.3



while some regions of Ireland and Spain became more productive than the EU15 average.

It is worth noting that GDP per employee in terms of 2005 euros shows a larger disparity than GDP per employee in terms of PPS. This is not surprising. The former only corrects for price level differences within countries over time, while the latter also corrects for price level differences across countries.³ Since richer countries tend to have higher price levels than poorer ones, GDP per capita expressed in PPS data shows less disparity than the data expressed in euros.

Finally, to attach explicitly geographic locations to the data, we plot GDP per employee relative to the EU15 average in 1991 and in 2011 for the European Union on a map (see Figure 3.3). Illustrating the level data relative to the EU15 average allows us not only to gauge the changes over time, but also to pin point them to successful and unsuccessful geographic locations. As far as the successes are concerned, most new member states from Eastern Europe had a GDP per capita of less than 40 percent of the European average in 1991, while several regions in Eastern Europe enjoyed a level of above 40 percent

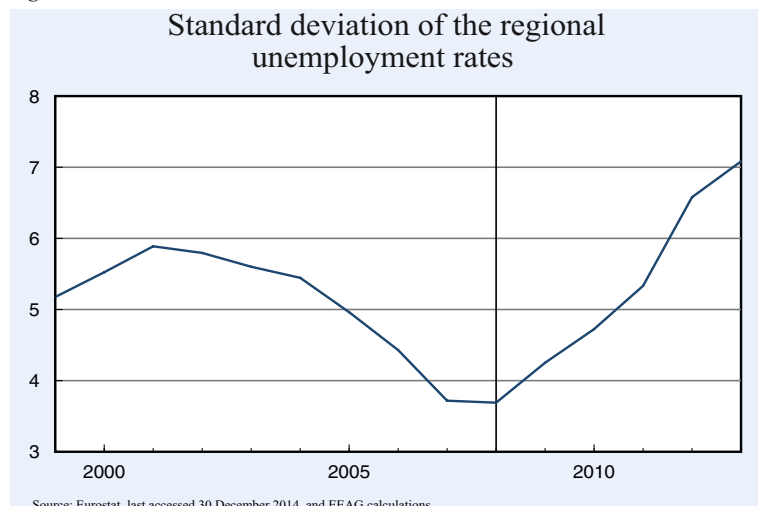
³ It is important to note that price indices are only available at the country level. Thus, adjustment for price level changes both over time and across space can be carried out with country level prices and PPS indices.

in 2011. The Budapest region of Hungary and the Bucharest region of Romania are both close to the EU15 average. There was also a significant labour productivity improvement in the regions of Eastern Germany, France, Spain and Ireland. As for the failures: several regions in Italy had lower labour productivity levels in 2011 than in 1991. There are regions in several countries from Germany to United Kingdom that fell behind in relative terms. Thus, while several European regions caught up in relative terms, others fell behind.

3.2.2 Unemployment

Differences in unemployment rates are another key indicator of regional disparity. Figure 3.4 shows the standard deviation of regional unemployment rates

Figure 3.4

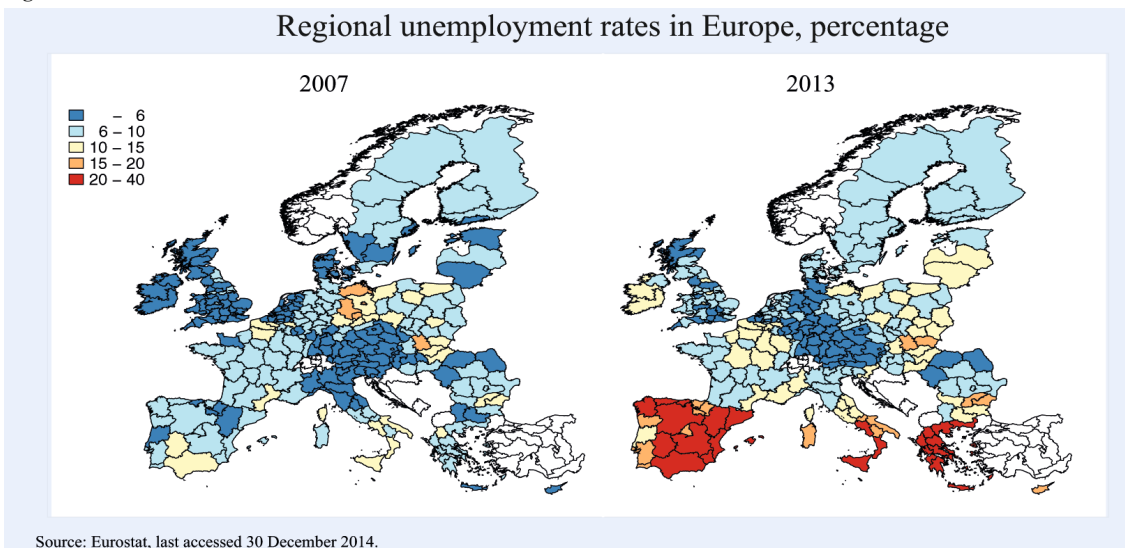


since 1999. The data suggests a substantial decline in unemployment disparity up until 2008. Since then disparities in unemployment rates have been on the rise. In particular, the disparities in unemployment rates are now higher than at any time since 1999. It is also worth mentioning that the decline in the disparity in regional unemployment rates stopped in 2007, while the decline in disparity of GDP per employee ground to a halt 2–3 years earlier.

Figure 3.5 shows the spatial distribution of unemployment across European regions in 2007 and 2013. Most European regions had an unemployment rate of below 10 percent in 2007. Few regions, and interestingly few German regions, had an unemployment rate of higher than 10 percent at that time. The situation has changed dramatically since then. The majority of regions still have unemployment rates of just under 10 percent, but all German regions now have rates of less than 10 percent. By contrast, the unemployment rates in all of Ireland’s regions were over 10 percent in 2013, but below 6 percent in 2007.

More importantly, the spatial distribution of unemployment in 2013 shows stronger border effects than that in 2007. The French regions experience an unemployment rate around 10 percent lower than the Spanish regions on the other side of the border. Similarly, unemployment in Greek regions is dramatically higher than that in neighbouring regions in Bulgaria. The French region next to the German border also tends to exhibit a higher unemployment rate than the neighbouring German regions. This pattern was less pronounced before the crisis.

Figure 3.5



3.3 Polarisation and the crisis: neighbour versus country effects

One crucial question concerning regional differences is whether the economic performance of a region is shaped by its neighbouring regions, or by the national economy. Did economic integration in the European Union reduce the effect of national borders representing differences in institutions and national economic policies, or do national borders still have significant economic effects? Did the crisis alter the economic effect of national borders? In this section we restricted ourselves to the old member states, the EU15 countries, as the forces of economic integration have had a longer time to unfold their effect in these states than in the EU27 countries.

3.3.1 GDP per employee

In an attempt to shed light on the effect of national borders on the economy, we begin by decomposing the standard deviation of the log regional real GDP per employee into within-country and between-country components. The former represents the regional effects, and the latter represents the country-specific effects. Figure 3.6 shows that between-country standard deviation in labour productivity, or country specific factors, declined between 1994 and 2008. At the same time, the within-country standard deviation, or the regional factors within countries, remained flat throughout the period. This could be interpreted as a sign that the effect of borders on disparity changed over time: countries converged to each other, and disparities

Figure 3.6

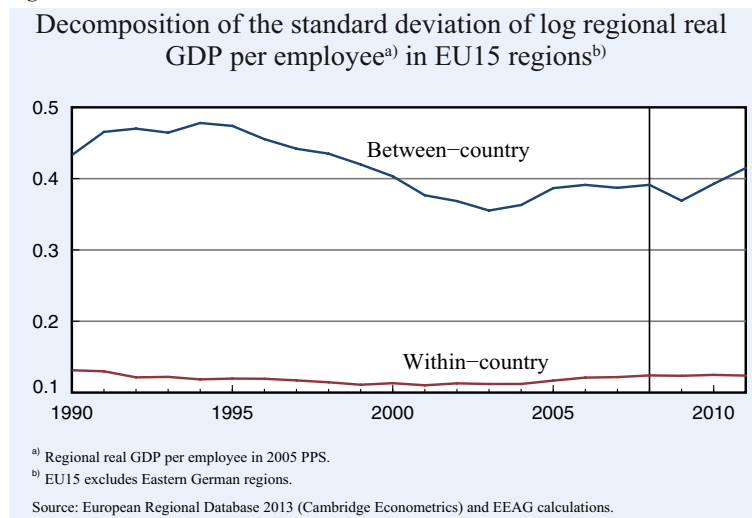


Figure 3.7

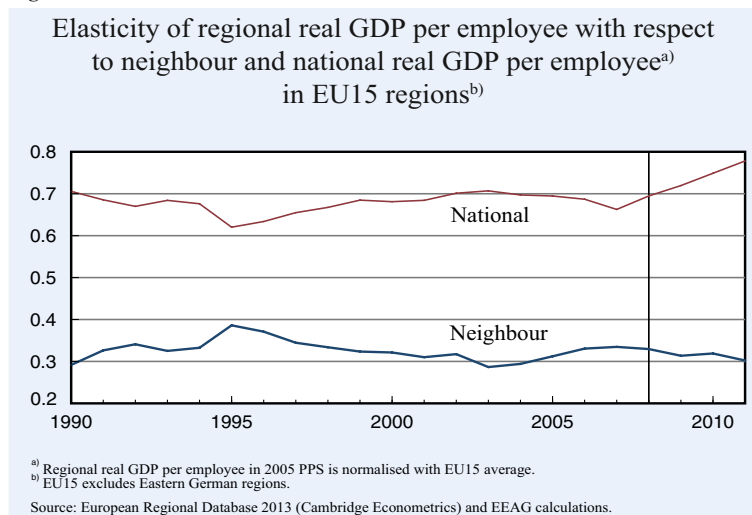


Table 3.1

Neighbour and national effects on the growth of regional real GDP per employee over the previous four years in EU15 regions^{a)}

	2007	2011
Growth in neighbours real GDP per employee over previous 4 years	0.230** (0.095)	0.116 (0.088)
Growth in national real GDP per employee over previous 4 years	0.615*** (0.105)	0.978*** (0.102)
Constant	-0.001 (0.001)	-0.001 (0.001)
Number of observations	187	187
R ²	0.339	0.645

^{a)} *** p<0.01, ** p<0.05, * p<0.10; standard errors are in parenthesis; OLS regressions; EU15 excludes Eastern German regions; regional real GDP per employee in 2005 PPS are normalised with EU15 average.

Source: European Regional Database 2013 (Cambridge Econometrics) and EEAG calculations.

across regions were increasingly explained by factors unrelated to the country's average GDP per employee. However, since the beginning of the crisis, country specific factors have been on the rise again.

To learn more about whether neighbour or country-specific effects matter more to regional real GDP per employee, we calculated its within-period elasticity with respect to neighbours and national labour productivity for every year.⁴ Figure 3.7 shows that elasticity with respect to national labour productivity was far greater than elasticity with respect to neighbour labour productivity as of 1990. If anything, national elasticity has slightly increased since the mid-1990s. This increase was far more pronounced as of the beginning of the crisis, which suggests that regional labour productivity is strongly related to the national average, and much less to neighbour productivity.

To get a better idea of how country specific factors are relevant relative to local regional factors, we regressed the four-year average growth in regional real GDP per employee on the change in neighbour and national real GDP per employee (all variables were normalised with the log real GDP per employee of the EU15). The results are presented in Table 3.1.

The evidence suggests that national effects became stronger and more important relative to neighbour effects as of the begin-

⁴ We regressed the log of regional real GDP per employee on the log of neighbour real GDP per employee and on the log of national real GDP per employee. The point estimates of the cross-sectional OLS for each year correspond to elasticities. All real GDP per employee data is normalised with EU15 average real GDP per employee.

Table 3.2

Comparing the domestic and foreign neighbour effect on growth in regional real GDP per employee over the previous four years in EU15 regions^{a)}

	2007	2011
Growth in foreign real GDP per employee rate over previous 4 years	-0.024 (0.060)	0.080 (0.075)
Growth in domestic real GDP per employee rate over previous 4 years	0.213 (0.176)	0.321 (0.207)
Growth in national real GDP per employee over previous 4 years	0.758*** (0.182)	0.691*** (0.244)
Constant	0.001* (0.001)	-0.001 (0.001)
Number of observations	72	72
R ²	0.554	0.660

^{a)}*** p<0.01, ** p<0.05, * p<0.10; standard errors are in parenthesis; OLS regressions on 4 years differences; EU15 excludes Eastern German regions; regional real GDP per employee in 2005 PPS are normalised with EU15 average.

Source: European Regional Database 2013 (Cambridge Econometrics) and EEAG calculations.

ning of the crisis.⁵ In particular, neighbour and national labour productivity growth had a significant positive effect on regional productivity growth between 2004 and 2007, while only the national effect remained significant between 2008 and 2011. In addition, the coefficient of national labour productivity growth also increased. This data, together with Figures 3.6 and 3.7, seems to suggest that national borders never went away: national policies and institutions always mattered a great deal, but during the crisis they became even more important.

Our next question is: to what extent do neighbour effects matter? In particular, does it make any difference whether the neighbouring region is in another country? Here we only considered regions in EU15 countries, which have both foreign and domestic regions as neighbours. We regressed growth in regional GDP per employee on growth in GDP per employee of foreign and domestic regional neighbours and the national economy. The results are presented in Table 3.2. It shows that national effects were important both before and during the crisis, as in the case where we considered all regions. However, the productivity growth of the domestic and foreign neighbours had no significant effect on regional productivity growth in either of the two time periods. Thus, there was no significant cross-border effect between regions on two sides of a

⁵ This and other simple regressions are used in this chapter to characterise the properties of the data, and we do not intend to imply that they necessarily represent a causal relationship even if we use the term "effect".

national border. National effects therefore dominated regional growth in the border areas.

When do cross-border productivity growth effects emerge? They may emerge in the presence of cross-border specialisation. Cross-regional complementarity in industrial structure can lead to positive correlations between labour productivity growth across neighbouring regions due to complementarity in production.⁶ If those regions are located in different countries, cross-border correlation may emerge. To check this idea, we computed the Krugman Specialisation Index (KSI) using six-industry disaggregation of total employment in each

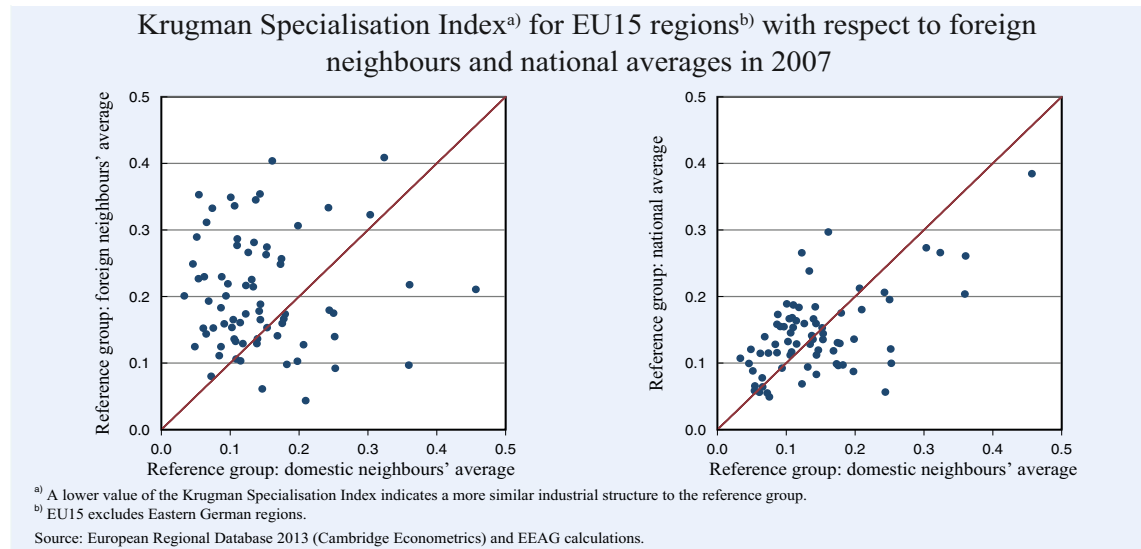
region.⁷ KSI measures the difference between the industrial structures of a geographic unit of interest and a reference group.⁸ The geographic units of interest in our case are the European regions with foreign neighbours. The index takes the value between zero and two. It is zero if the industrial structure of the region is identical to that of its foreign regions. A higher value implies a more different, and hence a more specialised industrial structure, and greater complementarity between the region and the reference. The index for each region is computed with foreign neighbours once the domestic neighbours average as reference group, and once the foreign neighbours average as reference group. The KSI based on foreign neighbours is plotted against the KSI based on the domestic neighbours to see relative to which group the degree of specialisation is larger. We also wanted to see whether the pattern changed during the crisis, which is why we prepared the graph for 2006 and 2011. The results are presented in Figure 3.8. On the horizontal axis KSI is based on domestic neighbours as the reference group, and on the vertical axis KSI is based on foreign neighbours as the reference group.

⁶ For a theoretical analysis of the spatial evolution of industrial structure, see among others Puga (1999).

⁷ The six industries are Agriculture (A); Manufacturing & Energy (B-E); Construction (F); Distribution, Communications and Transport (G-J); Financial & Business Services (K-N); Non-market Services (O-U).

⁸ Formally, the Krugman Specialisation Index is defined as $KSI = \sum_{i=1}^n |s_i - \bar{s}_i|$ where n is the number of industries, s_i and \bar{s}_i are the shares of industry i 's employment in total employment in the geographic unit of interest and in the reference group, respectively, cf. Krugman (1991).

Figure 3.8

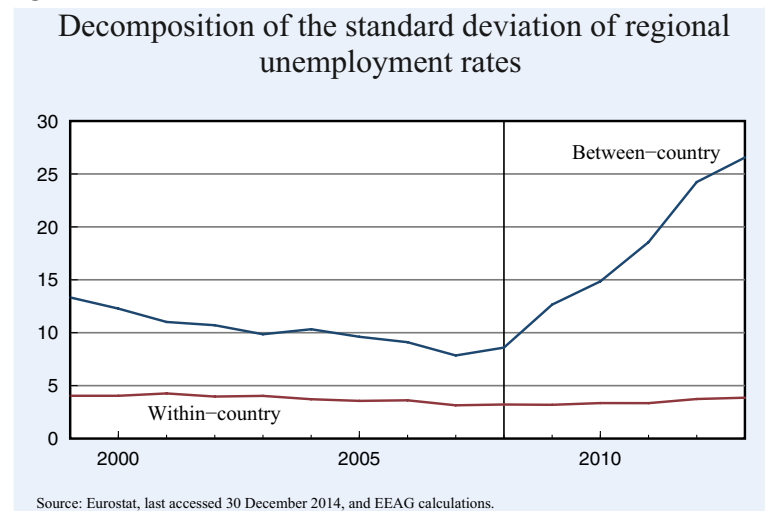


The figure suggests that the majority of regions were more similar to their domestic neighbours in terms of industrial structure than to their foreign neighbours. This is because the KSI index pairs represented by a dot on the figure lay above the 45-degree line for the majority of the regions, thus, the KSI index for these regions is higher when the reference group consists of foreign, rather than domestic neighbours. This suggests that there tend to be more complementarities between neighbouring regions, which are on different sides of the border, than between neighbouring regions on the same side of the border. Previously, however, we found no systematic relationships between the growth of a region and its foreign neighbours. These two findings seem to imply that there are unexploited opportunities in cross-border specialisation.

3.3.2 Unemployment

Turning to unemployment, Figure 3.9 shows the decomposition of the standard deviation of unemployment across regions into within-country and between-country components. Again, the former represents regional factors, and the latter represents country specific factors. The figure shows that the within-country standard deviation was flat throughout the period be-

Figure 3.9

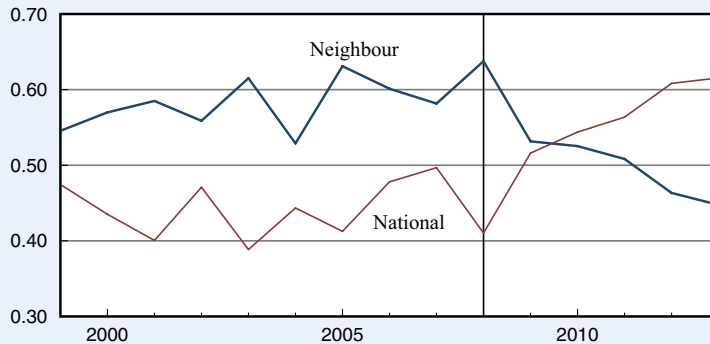


tween 1997 and 2013. By contrast, the between-country standard deviation followed a declining path until 2007–2008, but sharply increased afterwards. This means that the observed increase in the disparities between regional unemployment rates characterised by the evolution of standard deviation in Figure 3.4 occurred primarily due to the increase in the disparities between unemployment rates across countries. By contrast, disparities in unemployment rates within countries remained largely the same. Thus, country specific factors are the primary reason for the decline in regional disparities before 2008, and their increase afterwards.

To give an alternative characterisation of neighbour versus national effects on regional unemployment rates, we calculated its within-period elasticity with re-

Figure 3.10

Elasticity of regional unemployment rates with respect to neighbour and national unemployment rates^{a)}



^{a)} Unemployment rates are normalised with EU15 average.

Source: Eurostat, last accessed 30 December 2014, and EEAG calculations.

spect to neighbour and national unemployment rates.⁹ The elasticities are shown in Figure 3.10. Firstly, elasticity with respect to neighbour unemployment rate was higher than elasticity with respect to the national unemployment rate until 2008. Thus, changes in local labour market conditions mattered more than changes in their national counterparts for regional unemployment rates. After 2008 the former elasticity rates declined steeply, while the latter rose sharply. By 2013, the national unemployment rate mattered more than its neighbour counterpart. Hence Figure 3.10 yet again suggests that the crisis made national borders matter more than previously.¹⁰

To better gauge the extent to which regional and country factors respectively explain unemployment, we regressed the 4-year change in regional unemployment rate on the 4-year change in neighbour and national unemployment rates for EU15 countries in the years 2008 and 2013. The results are presented in Table 3.3. The coefficients suggest that both neighbour and national unemployment rates have a significant association with the regional unemployment in both periods. This, in turn, points to an interdependence of regional labour mar-

⁹ We regressed the log of regional unemployment rate on the log of neighbour unemployment rate and on the log of national unemployment rate. The point estimates of the cross-sectional OLS for each year correspond to elasticities. All unemployment rates are normalised with EU15.

¹⁰ One reason why borders mattered during the crisis is the welfare policies that were still conducted primarily at the national level, see Bertola (2007).

kets through commuting flows (see Patacchini and Zenou, 2007). However, the neighbour effect is smaller during the crisis than before it, while the national effect is larger. The evidence again suggests that the crisis made the local effects weaker and the national effects stronger.

We now turn to the EU15 regions, which have both domestic and foreign neighbours, to assess the difference between the two neighbours' effects. We run the same regressions as for Table 3.3 and the results are presented in Table 3.4.

Firstly, the effect of the change in the national unemployment rate on regional unemployment was significant both before and during the crisis. Moreover, the effect, represented by the coefficient, became stronger during the crisis, conforming with our results so far that the crisis reinforced national effects. Secondly, the domestic neighbour effect was significant but small in both periods. Curiously, it was positive before the crisis and negative during it, suggesting that an increase in the unemployment rate in a region was associated with a decline in the unemployment rate of its domestic neighbours. This could imply a lack of labour mobility within the country. Thirdly, the effect of foreign neighbours was insignificant before the crisis, but positive during the crisis. The co-movement of the regional unemployment rate with the unemployment rate in the foreign region suggests that there was labour mobility across the border, leading to the equalisation of

Table 3.3

Neighbour and national effects on changes in regional unemployment rates in EU15 regions^{a)}

	2008	2013
Change in neighbours unemployment rate over 4 years	0.277*** (0.097)	0.160** (0.070)
Change in national unemployment over 4 years	0.571*** (0.107)	0.827*** (0.065)
Constant	0.008 (0.012)	0.015* (0.009)
Number of observations	174	189
R ²	0.488	0.916

^{a)} *** p<0.01, ** p<0.05, * p<0.10; standard errors are in parenthesis; OLS regressions on 4 years differences; all unemployment rates are normalised with EU15 average.

Source: Eurostat, last accessed 30 December 2014, and EEAG calculations.

Table 3.4

Comparing the domestic and foreign neighbour effect on changes in regional unemployment rates in EU15 countries^{a)}

	2008	2013
Change in foreign neighbours unemployment rate over 4 years	- 0.048 (0.110)	0.162*** (0.058)
Change in domestic neighbours unemployment rate over 4 years	0.084** (0.042)	- 0.090*** (0.023)
Change in national unemployment over 4 years	0.631*** (0.122)	0.917*** (0.036)
Constant	- 0.026 (0.021)	0.001 (0.012)
Number of observations	67	72
R ²	0.414	0.924

^{a)} *** p<0.01, ** p<0.05, * p<0.10; Standard errors are in parenthesis; OLS regressions on 4 years differences; all unemployment rates are normalised with EU15 average.

Source: Eurostat, last accessed 30 December 2014, and EEAG calculations.

unemployment rates. This cross-border labour mobility implies that although national labour market conditions mattered more during the crisis than prior to it, borders became more blurred as workers sought jobs on the other side of the border to a greater extent than before the crisis.

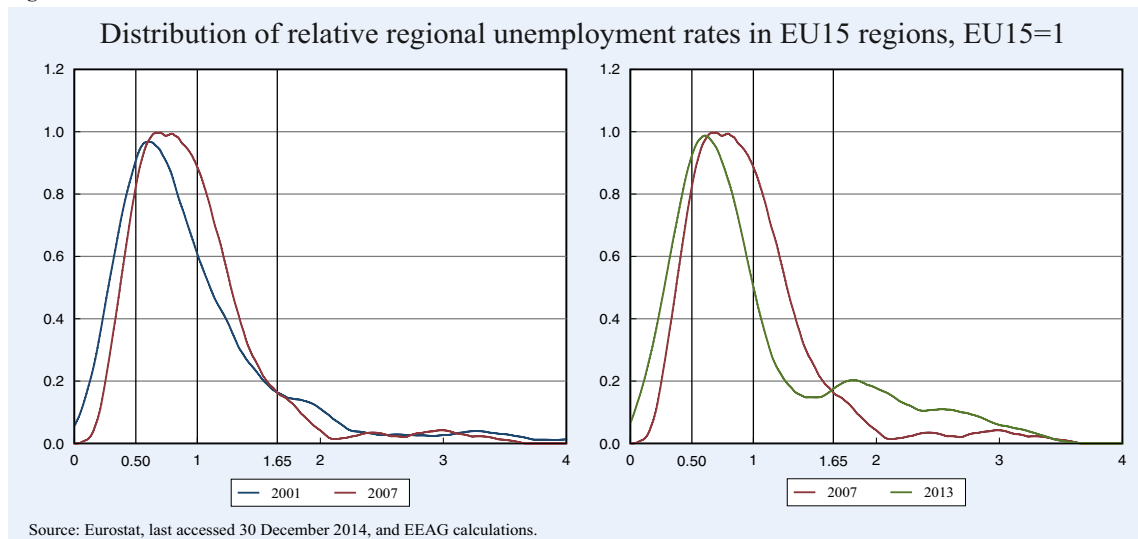
Our final piece of evidence on regional unemployment rates can be found in Figure 3.11, which shows the estimated distribution of regional unemployment rates normalised with the EU15 average for 2001, 2007 and 2013. We paired together 2001 with 2007 and 2007 with 2013 to contrast the changes in unemployment distribution before and during the crisis. The left side of the figure shows a decline in regional inequality in unemployment from 2001 to 2007. In particular, the

left tail of the distribution below 0.5 was reduced primarily due to the fall in average unemployment, taking the regions with low unemployment closer to the mean. More importantly, the mass on the high unemployment part of the distribution above 1.65 on the right declined significantly. Thus, the number of regions with unemployment levels of more than twice the EU15 average was reduced. Hence unemployment became less polarised across European regions before the crisis.

However, the crisis changed everything, as shown by the right side of Figure 3.11. The number of regions with over 1.65 of the EU15 unemployment average increased (the density for 2013 is higher than the density for 2007 above 1.65), and the number of regions with unemployment below 0.5 declined. European regions therefore became more polarised in terms of unemployment rates.

The change between 2001 and 2007 is particularly interesting. After analysing the distribution of regional unemployment for the EU15 countries, Overman and Puga (2002) argue that there was a polarisation in regional unemployment between 1986 and 1996. This was because both the number of regions with less than the EU15 average unemployment rate and the number of regions with more than twice the average EU15 un-

Figure 3.11



employment rate increased. The authors claim that this polarisation was partly caused by the fact that unemployment is more regional than national. In other words, unemployment levels in neighbouring regions started to align independent of national boundaries. These geographic clusters caused the polarisation in unemployment.

Overman and Puga (2002) construct a similar graph to Figure 3.11, whereby the distribution of relative European regional unemployment in 1996 is very similar to the distribution on our graph for 2001; and their estimated distribution for 1986 is very similar to our estimated distribution for 2007. Thus, the evolution in the distribution of unemployment suggests polarisation for the EU15, while the evolution in the distribution of regional unemployment between 2001 and 2007 indicates that unemployment became more uniform. Overman and Puga (2002) suggest that neighbour effects are stronger than national labour market policies, hence transnational and regional labour market policies are required to reduce polarisation in regional unemployment. Our figure implies that this may not be the case, as there was a significant reduction in polarisation between 2001 and 2007 when labour market policies became less, rather than more coordinated (see Bertola, 2013, 2014). Our regressions suggest that during the crisis, polarisation did not occur because unemployment became more localised. By contrast, polarisation in European unemployment occurred because unemployment became more national.¹¹

3.4 Regional disparities and policy coordination

Article 2 of the Treaty on European Union states that one of the objectives of the EU is “[...] to promote economic and social progress and a high level of employment [...] in particular [...] through the strengthening of economic and social cohesion [...]”. The relevant instruments adopted to promote “economic and social cohesion” are primarily left to the member states and lower levels of government. Only a small set of supranational policy instruments exists in the form of EU cohesion policy directly motivated by the effects on regional and national income inequality of the European economic integration process. We argue that the evidence on the evolution of disparities before and after the crisis indicates that uncoordinated na-

tional economic policies led to a fall in regional disparities at first, and to their subsequent rise. This happened despite the presence of supranational redistributive policy instruments.¹²

These supranational policies, called cohesion policies, are the second largest item in the EU Budget.¹³ Low GDP levels are an important criterion for making EU funds accessible to specific countries and regions both in theory and in practice. There is a negative correlation between GDP levels and funds received under the EU cohesion policy. In addition, to ensure that cohesion policy supports investments that otherwise would not have been made, the disbursement of funds is also conditional to a set of economically debatable additional indicators. There is a large body of literature assessing the effects of EU cohesion policies on convergence. Studies based on poor early data sets did not find evidence for EU cohesion policies having any effect (Boldrin and Canova, 2001). More recent studies, however, did find that the policies have helped to reduce disparities between core and peripheral regions (Leonardi, 2006; Becker et al., 2010). The problem, however, is that although convergence across the regions of Europe occurred (see Figure 3.1 for example), it is hard to establish what would have happened in the absence of structural policies.

The evidence gathered in this chapter suggests that convergence did indeed take place in the European Union, and particularly in the EU15 countries, which are the main focus of our analysis. Disparities in terms of labour productivities and unemployment rates declined. This decline primarily occurred due to a reduction in disparities between countries, and, to a much lesser extent, to a reduction in disparities across regions within countries. However, the disparities in terms of labour productivity started rising again some time in the mid-2000s (see Figure 3.2). This was primarily due to divergence between the crisis and non-crisis countries, but we also found some divergence within the non-crisis countries. In terms of unemployment, the disparities increased again after 2008 due to the crisis. The increase in disparities both in terms of labour productivity and unemployment was primarily due to an increase in disparities between countries and, to a much lesser extent, due to an increase in disparities across regions within countries (see Figures 3.6 and 3.9).

¹² A theoretical analysis of such supranational policies can be found among others in Martin (1999, 2005).

¹³ For a more detailed discussion see Aghion et al. (2003) among others.

¹¹ For a recent and more comprehensive analysis of the European regional labour markets, see Beyer and Smets (2015).

The evidence suggests that country specific factors played a more important role in shaping the convergence process than sub- or super-national ones. This conclusion leads us to the same factors that were at the heart of the crisis in Europe, which our previous reports EEAG (2013, 2014) have already discussed. Here we take the theoretical perspective from Bertola (2014), who demonstrates how uneven macroeconomic conditions across countries are linked to uneven policy choices and to a new set of macroeconomic outcomes.

Expectations of fast convergence with the core were already high in the periphery in the 1990s, and were reinforced when the euro was firmly announced at the Madrid Summit in 1995. Due to the elimination of exchange rate uncertainty, capital flew from the capital-rich core to the capital-poor periphery. Capital outflow depressed wages in the core while capital inflow raised wages and employment in the periphery. This led to falling disparities both in terms of labour productivity and unemployment across regions, primarily due to falling disparities across countries, while disparities across regions within countries did not change much. The lack of investment and the subsequent stagnation in the core – and in Germany in particular – made it necessary to implement labour market reforms aimed at enhancing the downward flexibility of wages and inducing a period of wage restraint that improved the competitiveness of workplaces.¹⁴ At the same time, a credit-driven boom with increased internal demand and rising wages, which eventually turned into a bubble, made similar reforms in the periphery superfluous.¹⁵ The lack of coordination in policy choices reversed the convergence of the European regions – initially in terms of labour productivity before the crisis even broke out – while the bursting bubble subsequently reversed it in terms of unemployment rates.¹⁶ Primarily, national policies shaped both the initial convergence and the subsequent divergence process. The seed of the divergence and decline in cohesion currently being observed was already planted by uncoordinated policies during the convergence period.

3.5 Conclusion

Convergence across European regions was not driven by cohesion policies, but by expectations, and its re-

¹⁴ See Sinn (2003, English version: 2007).

¹⁵ Bertola (2014) shows under what conditions this holds. See also Sinn (2014), Chapter 2.

¹⁶ The periphery does not include Italy, as the latter did not benefit from substantial capital inflows before the crisis although it is one of the crisis countries. The root of the Italian problem is different from the problem of the periphery, but is still related to a lack of policy coordination.

versal was caused by the uncoordinated policy choices of the core and periphery countries, as well as the bursting credit bubble in the periphery; and not by a lack of structural funds. National borders are now back with a vengeance. They never really went away, but merely blurred slightly. Country specific factors such as optimistic expectations about convergence, national economic reforms, and country specific crisis management, by contrast, were crucial in shaping regional disparities over time. Whatever the effect of supranational cohesion policies, they seem to be dominated by national policies and by the lack of coordination between them.

Thanks to the creation of the euro, monetary policy is coordinated. The Fiscal Compact attempts to coordinate some aspects of fiscal policy. However, the last twenty years of the European Union suggest that there are other economic areas in which a lack of policy coordination can give rise to a severe crisis.

References

- Aghion P., G. Bertola, M. Hellwig, J. Pisani-Ferry, A. Sapir, J. Vinals and H. Wallace (2003), *An Agenda for a Growing Europe: The Sapir Report*, Oxford University Press, Oxford.
- Barro, J. (2012), “Convergence and Modernization Revisited,” *NBER Working Paper* No. 18295.
- Becker S. O., M. von Ehrlich, P. Egger and R. Fenge (2010), “Going NUTS: The Effect of EU Structural Funds on Regional Performance,” *Journal of Public Economics* 94, pp. 578–90.
- Bertola, G. (2007), “Welfare Policy Integration Inconsistencies,” in: H. Berger and T. Moutos, eds., *Designing the New European Union*, Elsevier, Amsterdam, pp. 91–120.
- Bertola, G. (2013), “Labor Market Policies and European Crises,” *CEPR Discussion Paper* No. 9471.
- Bertola, G. (2014), “Labor Policies and Capital Mobility in Theory and in EMU,” *CEPR Discussion Paper* No. 10088.
- Beyer, R. C. M. and F. Smets (2015), “Labour Market Adjustments and Migration in Europe and the US: How Different?,” *Economic Policy*, forthcoming.
- Boldrin, M. and F. Canova (2001), “Inequality and Convergence in Europe’s Regions: Reconsidering European Regional Policies,” *Economic Policy* 16, pp. 205–53.
- EEAG (2013), *The EEAG Report on the European Economy 2013*, CESifo, Munich, <http://www.cesifo-group.de/DocDL/EEAG-2013.pdf>.
- EEAG (2014), *The EEAG Report on the European Economy 2014*, CESifo, Munich, <http://www.cesifo-group.de/DocDL/EEAG-2014.pdf>.
- Gennaioli, N., R. La Porta, F. L. De Silanes and A. Shleifer (2015), “Growth in Regions,” *Journal of Economic Growth*, forthcoming.
- Krugman, P. (1991), *Geography and Trade*, MIT Press, Cambridge (Mass.).
- Leonardi, R. (2007), “Cohesion in the European Union,” *Regional Studies* 40, pp. 155–66.
- Martin, P. (1999), “Public Policies, Regional Inequalities and Growth,” *Journal of Public Economics* 73, pp. 85–105.

- Martin, P. (2005), "The Geography of Inequalities in Europe," *Swedish Economic Policy Review* 12, pp. 83–108.
- Overman, H. G. and D. Puga (2002), "Unemployment Clusters across Europe's Regions and Countries," *Economic Policy* 17, pp. 115–48.
- Patacchini, E. and Y. Zenou (2007), "Spatial Dependence in Local Unemployment Rates," *Journal of Economic Geography* 7, pp. 169–91.
- Puga, D. (1999), "The Rise and Fall of Regional Inequalities," *European Economic Review* 43, pp. 303–34.
- Sinn, H.-W. (2003), *Ist Deutschland noch zu retten?*, Econ, Munich.
- Sinn, H.-W. (2007), *Can Germany Be Saved?*, MIT Press, Cambridge (Mass.).
- Sinn, H.-W. (2014), *The Euro Trap. On Bursting Bubbles, Budgets and Beliefs*, Oxford University Press, Oxford.