

# **Regional economic cycles and the emergence of sheltered economies in the periphery of the EU**

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## **The determinants of regional economic cycles and the emergence of sheltered economies in the periphery of the EU**

**Abstract:** It has been claimed that in recent years the evolution of regional disparities within European nations has become pro-cyclical, that is, disparities tend to increase in times of economic boom and to decrease during recessions. This represents a change with respect to the traditional patterns in the 1960s and 1970s, when growth in European lagging regions was higher than in the core during periods of economic growth, but lagging regions were more affected by economic crises. In this paper we first assess whether and when this change has happened, before analysing what are the factors behind the change in the evolution of disparities. We use a 20-year long database, comprising NUTS II regions in five European countries (France, Greece, Italy, Portugal and Spain) which include a large number of European lagging regions. The evidence supports the shift to pro-cyclical patterns in the evolution of regional disparities in Italy, Portugal and Spain. There is, in contrast, little evidence of such shift in Greece and France. We also relate the emergence of pro-cyclical patterns in the evolution of regional disparities and of sheltered economies, i.e. economies that are increasingly detached from the market, and thus increasingly impervious to economic cycles, to lower growth in these areas. This is explained by the fact that sheltered regions have become increasingly dependant on factors such as transfers, public investment, and public employment and therefore less exposed to changes in market conditions.

**Keywords:** Peripheral regions, economic cycles, sheltered economies, convergence, France, Greece, Italy, Portugal, Spain

## **Introduction**

After several decades of regional convergence (Barro and Sala-i-Martin, 1991; Tondl, 2001) the last two decades have been characterised by significant stability in the evolution of regional disparities across Europe or even divergence (Quah, 1996a; Magrini, 1999; Rodríguez-Pose, 1999; López-Bazo et al, 1999). Many explanations have been put forward in order to justify the decline in regional convergence trends. The centripetal effects of the economic integration process, which may be favouring the concentration of economic activity in the core of Europe to the detriment of the periphery (Brülhart and Torstensson, 1996; Midelfart-Knarvik et al., 2000), the increasing concentration of innovation (cite), the deceleration and almost suppression of inter-European migration trends (Faini, 2002), the coming to an end of the relative decline of agricultural employment in the periphery of Europe (Cuadrado-Roura et al, 1999) are among the most popular interpretations of the slowdown and reversal of regional convergence trends. Other interpretations have looked at the impact of public policies on regional growth trajectories in the core and the periphery. Middlefart-Knarvik and Overman (2002) have highlighted the possible anti-cohesive effect of national public policies aimed at the protection of strategic firms or sectors, or of European Union (EU) policies such as the Common Agricultural Policy, whose main beneficiaries have tended to be highly productive farmers in the core of Europe

(Cheshire; De la Fuente and Doménech 2001; European Commission, 2001). Finally, a rising number of voices are pointing to the ineffectiveness of the European cohesion effort (Boldrin and Canova, 2001; Puga 2002) or to the excessive emphasis on infrastructural and business support investment in peripheral regions (Rodríguez-Pose and Fratesi, 2002).

Much less attention has been devoted to the impact on convergence of economic cycles. Few studies have dealt with such a link, and the results coming out from them are contentious. Some authors have found evidence that regional disparities tend to behave in a pro-cyclical pattern, that is, increasing in periods of economic expansion and decreasing in periods of slow growth. This pattern has been identified at the EU level for short-term growth processes by Petrakos, Rodríguez-Pose, and Rovolis (2003) and by Ioannides and Petrakos (2000) and by Petrakos (2001) for Greece. Dewhurst (1998) also detected a pro-cyclical evolution of disparities for the UK in the period 1984-93, as did Cuadrado Roura et al (1998) and Rodríguez-Pose (2000) for Spain. Quah (1996a), by contrast, finds little or no evidence of a relationship between the economic cycle and the evolution of disparities in the US. Finally, other scholars report an anti-cyclical relationship between regional disparities and regional growth, that is, disparities diminish in periods of high growth and increase in periods of low growth. This sort of pattern was pinpointed by Pekkala (2000) for Finland and for Spain by Cuadrado Roura, Mancha Navarro, and Garrido Yserte (1998) for the period between 1955 and 1985.

The mix of contrasting evidences implies that the association between economic cycles and the evolution of regional disparities is far from clear-cut and that it is affected by the factors that shape growth in any given territory and in any given period (Pekkala, 2000).

In this paper, we intend to demonstrate that economic cycles matter for regional convergence in the periphery of the EU. We argue that the relationship between regional disparities and economic cycles in the four countries of the EU (Greece, Italy, Portugal, and Spain) that, together with Ireland, have been the greatest recipients of the EU cohesion effort, is increasingly becoming pro-cyclical. As a consequence, ‘sheltered economies’ (Trigilia, 1992; Padoa-Schioppa 1993) are emerging in the periphery of these countries leaving many of their poorest regions progressively detached from the market and more dependent on factors such as public employment and state transfers and assistance than on viable entrepreneurial initiatives. Peripheral regions in these countries are thus increasingly ill-prepared to compete in a more integrated market and less capable of maximizing their ‘potential for convergence’, which generally becomes available in periods of economic boom (Pekkala, 2000). We use France, a country of the core of the EU, characterized by the absence – with the exception of Corsica and parts of Nord-Pas de Calais – of strongly assisted regions in the European context and by the relative small dimension of its internal disparities, as a benchmark.

The paper is divided into four further sections. Section two deals with the definition of sheltered economies. Section three studies whether sheltered economies are appearing

in the periphery of Europe, before analysing the link between growth trends and the evolution of regional disparities in our five case countries between 1980 and 2000 and its consequences on long-term economic growth in section four. Section five presents the main conclusions.

### **Definition of a sheltered economy**

The economic performance of nations and regions is affected by long and short economic cycles. Yet not all nations and regions are equally exposed to the shifts in the cycle. Open economies tend, as a general rule, to be more affected by the ups and downs in the cycle, growing faster in the periods of economic boom and experiencing lower growth during the troughs of the cycle. Less open economies are likely to be less influenced by changes in the cycle, either as a consequence of their relative isolation or of the predominance of sectors less exposed to the market.

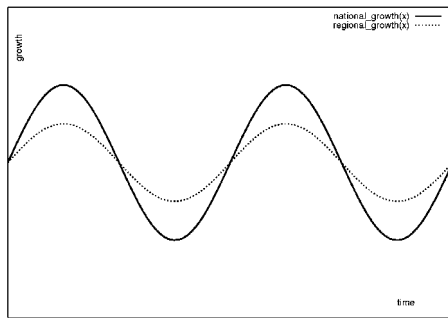
The degree of exposure of an economy to business cycles greatly depends on the level of interaction between that economy and the rest of the world, generally measured by the level of trade, a factor which is, in turn, influenced by the sectoral mix within the economy. Economies heavily reliant on manufacturing and business-oriented services, which are heavily exposed to competition, are generally more open than economies with large agricultural and non-market oriented sectors, that are by definition less affected by changes in the overall economic conditions in the case of the latter, or whose markets have become greatly protected and regulated in the case of the former. Factors other than pure market forces also play a part in the level of exposure of an economy to

business cycles. The presence of large and comprehensive welfare systems or of systems of direct or indirect income support and/or the prevalence of structures of political and social patronage and clientelism are also indicators of how an economy will react to changes in market conditions.

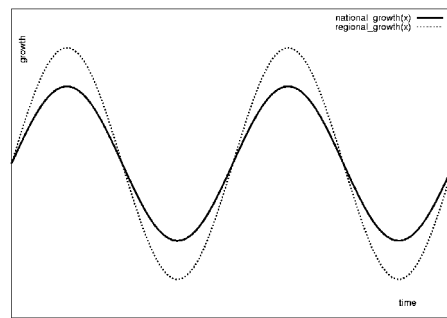
Sheltered economies can be defined as those economies that are more impervious to changes in the economic cycle. Sheltered regions are thus less responsive than the average of the country where they are located to variations in the economic cycle. The factors that determine this low level of responsiveness are related to the greater reliance of these regions relative to the country on sectors less exposed to market changes and on transfers. Sheltered regions are generally featured by a lower use of its resources, reflected in lower overall levels of employment, which affect especially women and the young and higher unemployment levels, often combining higher long-term and youth unemployment. Another characteristic of sheltered regions is their reliance on non-market oriented sectors, and especially on the public sector, for the genesis of employment. In contrast to employment in manufacturing or in business-oriented sectors, the creation and destruction of employment in the public sector is more related to political than to economic decisions and therefore less affected by changes in economic conditions or by the business cycle.

Figure 1a represents the typical growth pattern of a sheltered region with respect to the national average. Either as a result of the predominance of relatively protected sectors and/or the occurrence of factors that allow a large percentage of the population to remain outside the labour market, sheltered regions tend to grow below the national

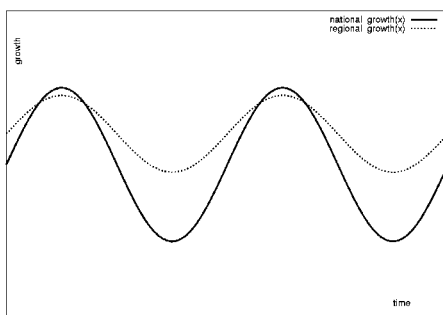
level in periods of economic growth, but to be less affected by the downs in the business cycle. Open regions or regions more exposed to market forces have an opposite behaviour. They outperform the national economy in periods of economic expansion, but lag behind in period of recession (Figure 1b).



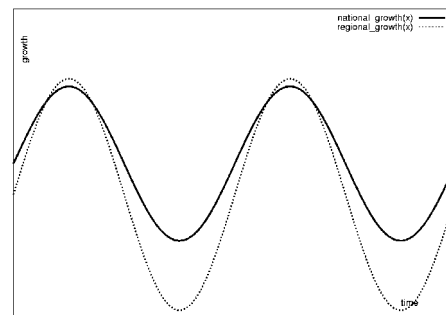
1a. Sheltered region



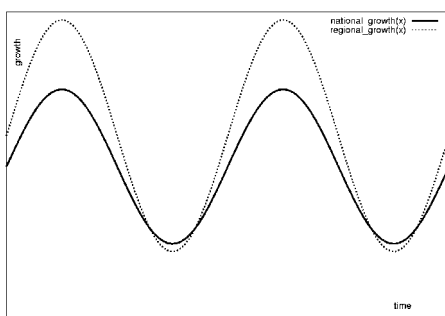
1b. Exposed region



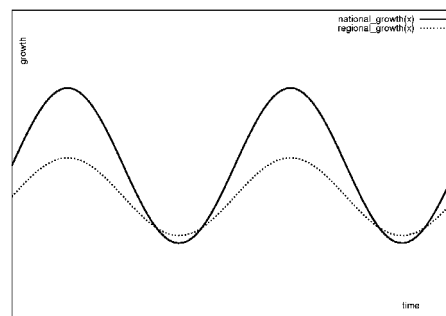
1c. Sheltered region expanding



1d. Sheltered region declining



1e. Exposed region expanding



1f. Exposed region declining

**Figure 1.** Different theoretical links between regional and national economic cycles.



In the two ideal models of a sheltered and an open economy, long term growth rates will remain stable, implying economic stability and a lack of convergence or divergence. However, the ideal situation depicted in Figures 1a and 1b is uncommon in reality. Several variations of these ideal situations can occur leading to long-term convergence or divergence. Under certain circumstances, it can be envisaged that sheltered economies can outperform open economies. This will occur in cases where the relative economic decline of a sheltered economy in relation to national economic growth during periods of economic boom is lower than the relative economic expansion in periods of recession (Figure 1c). Similarly, open economies can marginally outperform the country in the expansion periods and suffer a strong decline in periods of economic decline (Figure 1d). Under these circumstances – and assuming that sheltered regions are poorer than open regions<sup>1</sup> - convergence will take place. Conversely, divergence will occur when the relative decline of a sheltered region in periods of economic crisis exceeds the relative catch-up of the expansion phases (Figure 1e), or when the relative economic expansion of an open region in periods of boom outstrips its decline in recessions (Figure 1f).

Which outcome is likely to prevail? Although in the short run the existence of sheltered economies does not necessarily have to lead to economic divergence, in the long-run regional divergence is more likely to take place than convergence. The reason for this is related to the frequent generation of a downward spiral that prevents sheltered

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<sup>1</sup> Which is the most likely scenario, since poorer regions tend to have lower employment levels, higher unemployment, higher levels of public employment, and a higher dependency on transfers, which are also features of sheltered economies.

economies from fulfilling their ‘potential for convergence’ (Pekkala, 2000). The increasing reliance of sheltered economies on public employment and transfers is likely to produce a vicious circle of political practice, described by Trigilia (1992) for the case of southern Italy, in which local politicians and public opinion in sheltered regions demand greater transfers from the centre and employment generation in the public sector as a means to combat their lack of competitiveness in increasingly integrated economic systems. As these transfers and public employment are generally used as a means of income support and of maintaining social and political stability, rather than of setting the bases to allow these regions to compete, the outcome is likely to be an even greater shelter from the market. If we add that in numerous cases transfers and public employment are used as a way of keeping unemployment at manageable levels and of satisfying clientelistic compromises and maintaining political networks by local politicians (Hopkin, 2002) these practices frequently bring about less economic activity exposed to market competition, greater protection and eventually even greater backwardness.

### **The emergence of sheltered economies in the periphery of Europe**

The question that needs to be addressed at this stage is whether what we have defined as sheltered economies are now the norm in the periphery of Europe and whether such a pro-cyclical pattern in the evolution of regional disparities in our case studies is a recent phenomenon. In order to do this we build a simple indicator of sheltered economies for each country using the regional growth differentials with respect to the national growth rate in the years of expansion and of recession. The indicator adopts the following form:

$$Shelter = EXP - REC$$

Where:

$$EXP = \frac{\sum_{year=1}^n (regional\_growth - national\_growth) \cdot I_{EXP}}{\sum_{year=1}^n I_{EXP}} \cdot GDP$$

$$REC = \frac{\sum_{year=1}^n (regional\_growth - national\_growth) \cdot I_{REC}}{\sum_{year=1}^n I_{REC}} \cdot GDP$$

*EXP* and *REC* are indicators of the performance of regional economies relative to the national growth patterns in years of economic expansion and years of recession.  $I_{EXP}$  is an indicator of whether the country is in an expansion or recession phase, which takes the value of 1 in the years of expansion and the value of 0 in recession. In the same way,  $I_{REC}$  takes the value of 1 in the periods of recession and the value of 0 in expansion. The years of expansion and recession are defined as the years in which national growth rates are above or below respectively the average national growth rate over the period taken into consideration (1981-1999). Both *EXP* and *REC* are weighted by the average GDP of the period, in order to avoid the possible distortions associated with the different economic size of regions when calculating each indicator.

The sheltered economy indicator takes a value of 0 if the regional economic performance is completely independent from business cycles, a positive value if the regional economy shows a performance that is closer to that of an open economy, as

defined in Figure 1b, and negative values if, on the contrary, the regional economy is sheltered, as defined in Figure 1a<sup>2</sup>.

Defined in this way, the sheltered economy indicator has the advantage of being independent from a possible medium-term decline or expansion path of any given region, since a region growing above or below the country's average both in expansion and in recession – that is any of the behaviours described in Figures 1c to 1f – will have a value of 0.

The results of the analysis are reported in Table 1, where, according to the number of regions for each country, the results are aggregated for the regions whose GDP is above and below the national average during the period of analysis, as well as for the richest and the poorest regions. Three different results are presented in order to give a more dynamic picture of the evolution of regional growth patterns vis-a-vis the national economic cycle: for the whole period of analysis, for the 1980s and for the 1990s.

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<sup>2</sup> Data used in this analysis are annual GDP data from Eurostat's REGIO database.

Although in an economic cycle analysis quarterly data would have been more adequate, not such comparative data exist for regions across Europe. The fact that existing data only cover 18 years represents an additional problem since no time series exist to cover more than a couple of short business cycles.

The results highlight that, as a whole, sheltered economies are progressively becoming the norm in the periphery of the EU. Over the last two decades we observe that, with the only exception of Greece, poorer regions in the periphery of the EU have increasingly adopted patterns of growth akin to those of economies that are less exposed to the market, growing on average below the national rate in periods of economic expansion and above it in periods of recession. Such behaviour implies a pro-cyclical evolution of regional disparities in most of the countries covered in the analysis.

The most extreme case is that of Italy, where a pro-cyclical pattern in the evolution of regional disparities has been the norm throughout the whole period of analysis (Table 1). Since at least the late 1980s richer regions in Italy have been more affected by changes in market conditions than poorer regions. This happens both when we consider all the regions whose GDP has remained above the national average or just the richest five regions (which correspond exactly to the top quartile). In contrast, regions with a GDP below the national average and the five regions in the bottom quartile displayed a regional behaviour which is typical of sheltered regions: lower growth in times of economic expansion, but higher than the national average in times of recession. This behaviour remained relatively stable throughout the 1980s and 1990s in a country which has had the longest experience in Europe of development and assistance policies to the poorer regions of the South. Moreover, in the Italian case openness to the market seems to have paid off for the richest regions. The five richest regions in the country saw their economic behaviour shift from a situation more akin to that of the open economy of Figure 1b to that of regions whose growth is similar to that of the country in recession phases but higher than the average in periods of boom (Figure 1f). In contrast, the

poorest five regions moved in an opposite direction. Whereas in the 1980s a relative good performance in the periods of recession more than compensated for their relative decline in periods of expansion, during the 1990s the decline in periods of expansion far exceeded the higher than average growth in recessions (Table 1).

**Table 1.** Sheltered economies indicator.

GROUP	WHOLE PERIOD			1980s			1990s		
	expansion	recession	Sheltered economy indicator	expansion	recession	Sheltered economy indicator	expansion	recession	Sheltered economy indicator
<b>Italy</b>									
Below nat average	-0.572	0.421	-0.993	-0.577	1.023	-1.601	-0.563	0.162	-0.725
Above nat average	0.234	-0.115	0.349	0.293	-0.212	0.505	0.116	-0.073	0.189
bottom5	-0.638	0.414	-1.051	-0.680	1.098	-1.778	-0.553	0.120	-0.673
top5	0.348	-0.240	0.588	0.407	-0.477	0.884	0.231	-0.138	0.369
<b>Spain</b>									
Below nat average	-0.301	-0.174	-0.128	-0.397	-0.332	-0.065	-0.225	-0.015	-0.209
Above nat average	0.244	0.137	0.107	0.361	0.301	0.060	0.150	-0.028	0.178
bottom4	-0.207	-0.053	-0.154	0.028	-0.421	0.449	-0.396	0.314	-0.710
top5	0.586	0.205	0.381	0.895	0.262	0.633	0.339	0.148	0.192
<b>Portugal</b>									
Lisboa	0.028	-0.410	0.438	-1.747	-0.148	-1.599	1.211	-0.673	1.884
Rest	-0.778	0.211	-0.989	-0.064	-0.001	-0.062	-1.254	0.423	-1.677
<b>Greece</b>									
top3	-0.554	0.117	-0.671	-0.834	-0.400	-0.434	-0.394	0.978	-1.372
Rest	0.483	-0.040	0.523	0.713	0.448	0.265	0.352	-0.855	1.207
bottom3	0.452	0.677	-0.225	0.262	1.393	-1.130	0.560	-0.515	1.076
<b>France</b>									
Below nat average	-0.427	-0.228	-0.200	-0.649	-0.257	-0.391	-0.151	-0.051	-0.100
Above nat average	-0.141	0.055	-0.196	-0.393	0.458	-0.851	0.174	0.063	0.111
bottom5	-0.048	-0.478	0.430	-0.327	-1.183	0.856	-0.074	-0.080	0.006
top5	-0.167	0.038	-0.205	-0.440	0.419	-0.858	0.208	0.065	0.143

In the Spanish case sheltered economies are also the norm among the poorest regions for the whole period of analysis. As in the Italian case, for the period 1981-1999, both the regions whose GDP has remained below the national average and the poorest four

regions displayed growth behaviours relative to the national economic cycle typical of sheltered economies (Table 1). Regions with an above average GDP per capita and the five richest regions, by contrast, had economic growth behaviours similar to those of open economies. However, the shift to sheltered economies in the Spanish periphery has taken place more recently than in Italy. During the 1980s only the regions whose GDP was below the national average corresponded to the sheltered economy category. The four poorest regions, on the contrary, showed an economic behaviour that was similar to that of open economies. The sheltered economy index of the group did not differ greatly from that was similar to that of the five richest regions, a behaviour that indicated a higher exposure to the market than even the set of regions whose GDP was above average. The 1990s marked a shift in the economic trajectory of the bottom four Spanish regions, which became much more impervious to changes in the market, adopting the typical pattern of a sheltered economy. As in the Italian case, there seems to be an overall association between the degree of exposure of an economy to the market and economic growth. The top five Spanish regions, which remained relatively exposed to changes in the economic cycle throughout the period of analysis, grew above the Spanish national average both in periods of economic expansion and recession (Table 1). The more sheltered areas – the set of regions below the Spanish average in terms of GDP and the poorest five regions in the 1990s – either had lower levels of growth than the national average in all phases of the economic cycle or the slightly higher than average growth in the periods of recession did not compensate the strong relative declines during economic boom periods, as is the case of the bottom five regions during the 1990s.

Portugal is another case of a country which has recently witnessed the emergence of sheltered economies in its periphery. Given its limited number of regions, we have divided the subset into Lisbon and the Tagus Valley – the richest region – and the remainder of the country. The division is a familiar one: whereas for the whole period the capital and richest region has remained open to market forces and its growth patterns put it in the category of open economies, the remaining regions display the growth behaviour of sheltered economies (Table 1). As in the case of Spain, this shift has taken place only recently. During the 1980s the economic performance of Lisbon belonged to the category of sheltered regions, with a higher relative decline in periods of expansion than in relative recession years. The economic trajectory of the remainder of the country was much closer to 0 and thus relatively independent of the behaviour of economic cycles. In the 1990s the situation changed radically, with Lisbon's economic performance conforming to the archetypical trajectory of regions open to the market and that of the remainder of the country to that of sheltered economies. Portugal is a third case where exposure to the market is associated to higher growth, at least in the 1990s. During this period the relative high growth of Lisbon during the years in which national growth exceeded the national average for the period was higher than the relative decline in relative recession years (Table 1). The remaining regions were in the exact opposite situation.

Greece is the only of our peripheral countries that has not witnessed yet the appearance of sheltered economies. Whereas for the whole period of analysis the poorest three regions have adopted the sheltered economy pattern, the same could be said for the top three regions (Table 1). And whereas the poorest regions seem to be becoming



progressively more open, the economic trajectory of the top three regions makes them increasingly sheltered with a much higher growth than the national average in times of recession and a lower growth in times of economic decline. The remaining regions in the country respond to the classification of open economies throughout the period of analysis. The sheltered economy behaviour of the richest regions in the country does not imply that there has been convergence. Although that was the case in the 1980s, when the richest three regions grew below the national average during the ups and downs of the cycle, in the 1990s the expansion of the core regions during recession years outstripped their relative decline in the expansion years. In contrast, in the remaining regions – the bottom three excluded – the catch up in expansion years did not compensate for the decline during the recession periods (Table 1).

Finally in our control case, France, we find less evidence of any association between economic growth and business cycles. The poorest five regions remain relatively exposed to market changes throughout the period of analysis, whereas the richest five are more sheltered in the 1980s than in the 1990s (Table 1). There does not seem to be a significant difference in growth behaviour among regions whose GDP was above and below the national average, although the former seem to have become more open and the latter more sheltered as the period of analyses progresses. In any case, for the 1990s the values of our sheltered economy indicator are close to 0, regardless of the chosen subset, indicating an overall lack of association between business cycles and economic performance.

## **The effect of sheltered economies on long-term growth**

The results of the previous analysis indicate that the most peripheral regions in our case countries, with the only exception of the poorest regions in Greece, have been for long or have become increasingly sheltered from market conditions, leading to a pro-cyclical evolution of regional disparities. In this section we first look at the evolution of economic growth and regional disparities in our five case studies, before conducting a regression analysis linking regional growth in the last two decades to a series of structural factors that may have an influence on this shift according to our definition of sheltered economies.

Figure 2 charts the evolution of the economic cycle (measured on the left-hand y axis) and the coefficient of regional variation as a measure of regional disparities (represented on the right-hand y axis) for our five case countries during the period of analysis. In the countries where lagging regions were already sheltered at the beginning of the period (Italy) or where they have become increasingly sheltered (Portugal and Spain) there is evidence of the existence or of a shift towards a pro-cyclical evolution of regional disparities.

In the Italian case regional disparities have followed a pro-cyclical pattern since almost the beginning of the 1980s. The economic expansion which characterised the second half of the 80s was associated with an increase in regional disparities that came to an end with the economic slowdown, which initiated in 1989. The years leading to the trough of the crisis were also years of a reduction in regional disparities. A better



The Portuguese and Spanish cases indicate that the shift to a pro-cyclical evolution in regional disparities is more recent than in Italy. In the Spanish case this change takes place in the late 1980s. The early and mid-1980s are still featured by an anti-cyclical evolution of regional disparities: disparities increase in periods of decline and decrease in periods of boom. Since the late 1980s and coinciding with EU membership there is a shift in this pattern and the evolution of disparities becomes clearly pro-cyclical, coinciding in time with the emergence of sheltered economies in the periphery of the country (Figure 2). In the Portuguese case lack of reliable regional data prior to 1988 and questions about the reliability of some of the data provided – which may explain the steep increase in disparities in 1999 – suggest caution when interpreting the results. In any case, the evolution of regional disparities since 1988 presents a very similar picture to that of Spain: a decline in disparities following the slowdown in the economic cycle of the late 1980s, followed by an increase in regional inequality coinciding with the recovery of the mid- and late-1990s (Figure 2).

No overall link is, however, observed for Greece prior to 1994. Whereas regional disparities remain fairly stable during this period, there is a strong variability in growth rates which make the identification of recession and expansion periods difficult. The years of relative prosperity which start in 1994 are associated with a marginal increase in the dispersion of its regional income, which, as mentioned earlier, is not associated with the emergence of sheltered economies in peripheral regions.

In the French case no clear cut link is observed between regional disparities and economic cycles. Regional disparities increase in France between 1982 and 1994, a period that includes two episodes of low growth in the early 1980s and early 1990s flanking the expansion of the late 1980s. Since 1994 some sort of pro-cyclical pattern begins to appear.

The question that emerges at this point is to what extent the emergence of sheltered economies in the periphery of Europe is associated with a medium- and long-run economic decline in the affected regions. In the theoretical section of the paper we indicated that although the emergence of sheltered economies does not necessarily have to be associated with medium- and long-term economic decline, but that given the characteristics that lead to the emergence of a sheltered economy in a region, it may be the case that sheltered regions may not be able to fulfil their potential for convergence. Regions that are incapable of using their human resources (either through exclusion from the labour market or unemployment), that rely on public employment for the genesis of a large percentage of new employment or on transfers are likely to be less able to withstand competition, jeopardising thus regional convergence across the EU. In order to assess whether this is the case, we conduct a simple OLS regression, regressing the variation of the percentage of per capita GDP of the region with respect to the country on a series of indicators that lie behind the definition of a sheltered region presented in section 2. The reason for using the variation of the regional percentage of per capita GDP with respect to the country rather than regional growth is to minimise the problems of spatial autocorrelation detected when growth rates are used (Armstrong, 1995; Magrini, 1995). The equation adopts the following form:

$$VGDP_1 = f \{GDP_0, TRANS, EMP_0, \Delta EMP, UNEM_0, \Delta UNEM, ADSER_0, \Delta ADSER, NMSE_0, \Delta NMSE\}$$

Where:

$VGDP_1$  is, as mentioned earlier the variation of the percentage of per capita GDP of the region with respect to the country;

$GDP_0$  denotes the GDP per capita at the beginning of the period of analysis;

TRANS is a dummy variable which adopts the value of 1 in current or former Objective 1 regions, used as an imperfect proxy for transfers (since no comparable time series exist for transfers);

$EMP_0$  denotes the initial rate of employment;

$\Delta EMP$  represents the change in the rate of employment throughout the period of analysis;

$UNEM_0$  denotes the initial rate of unemployment;

$\Delta UNEM$  is the change in the rate of unemployment throughout the period of analysis;

$ADSER_0$  is the rate of employment in banking, insurance and real estate services - as a proxy for advanced services - at the beginning of the period of analysis

$\Delta ADSER$  denotes the change in the rate of employment in banking, insurance and real estate services

$NMSE_0$  represents the initial rate of employment in non-market oriented services, as a proxy for public employment; and

$\Delta NMSE$  denotes the change in the rate of employment in non-market oriented services.

All variables included in the analysis, with the exception of the dummy TRANS are weighted nationally in order to minimize possible spatial autocorrelation problems. Two stepwise regressions are performed for the whole period of analysis, the 1980s, and the 1990s. The first model [1] includes all the variables in the equation. The second model [2] represents the most satisfactory simplification of the general regression at a 90 percent level of significance. VIF and Moran's I tests have been carried out in order to check for multicollinearity and spatial autocorrelation respectively. Any violation of assumptions is reported.

**Table 2.** Regression results

Indep. Var.	1980-2000		1980-1990		1990-2000	
	[1]	[2]	[3]	[4]	[5]	[6]
GDP <sub>0</sub>	-0.5237*** -3.2422	-0.4280*** -3.4123	-0.6932*** -3.9108	-0.5026*** -3.6702	-0.2128 -1.0989	-0.1649 -1.4262
TRANS	-0.0765 -0.5982		0.1867 1.3307		-0.2878** -2.1597	-0.1965* -1.7745
EMP <sub>0</sub>	0.2441 1.4598	0.4338*** 3.3762	0.2107 1.1485		0.1079 0.5184	
ΔEMP	0.1254 0.7292	0.3044*** 2.8414	0.2337 1.2385		-0.0621 -0.3832	
UNEM <sub>0</sub>	-0.2351 -1.5793		-0.1809 -1.1077	-0.2157* -1.7689	-0.1788 -1.0471	-0.2513* -1.8980
ΔUNEM	-0.1694 -0.9563		-0.2476 -1.2739	-0.3202** -2.5114	0.0799 0.5168	
ADSER <sub>0</sub>	0.1078 0.6182		0.3843** 2.0074		-0.0596 -0.3816	

$\Delta$ ADSER	-0.2076 <i>-1.6620</i>	-0.2681** <i>-2.6628</i>	0.2228 <i>1.6256</i>		-0.4212*** <i>-3.6582</i>	-0.3908*** <i>-3.6125</i>
NMSER <sub>0</sub>	0.3128** <i>2.0932</i>	0.3183** <i>2.4959</i>	-0.0287 <i>-0.1752</i>		0.2785* <i>1.7980</i>	0.2388* <i>1.8836</i>
$\Delta$ NMSER	-0.2853** <i>-2.2816</i>	-0.2857** <i>-2.4124</i>	-0.4047*** <i>-2.9495</i>	-0.4540*** <i>-3.9330</i>	-0.1567 <i>-1.2427</i>	
<i>F</i>	5.0475	7.9508	3.0912	5.2365	4.1350	7.7345
<i>Prob&gt;F</i>	0.000	0.000	0.003	0.001	0.000	0.000
<i>df</i>	10,65	6,69	10,65	4,71	10,65	5,70
R <sup>2</sup>	0.4371	0.4087	0.3222	0.2278	0.3888	0.3558
Adj. R <sup>2</sup>	0.3505	0.3573	0.2180	0.1843	0.2947	0.3098
Multicollinearity	No	No	No	No	Yes	No
Sp. Autocorrelation	No	No	No	No	No	No

Standardized coefficients reported. t-statistics in italics under coefficients

\*\*\*, \*\*, and \* denote significance at the 99%, 95%, and 90% respectively

The results of the OLS regression generally support the idea that regions whose structural characteristics are closer to those of the definition of sheltered economies tend in the medium run to grow at a lower rate than their more open counterparts. The large majority of the significant coefficients reported in Table 2 indicate that regions with lower overall levels of employment and with lower growth in employment levels, with greater initial unemployment and greater unemployment growth, and those characterized by a greater relative creation of public employment and a greater dependency on transfers experience lower growth rates than the remaining regions. However not all these factors play the same role in different periods of time. For the whole period of analysis low overall employment levels and low employment growth have a greater association with low levels of growth than unemployment and the changes in unemployment rates. High initial unemployment rates have, however, a



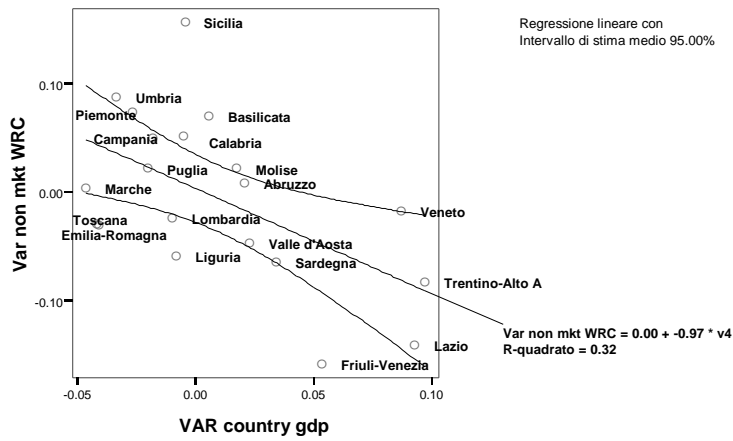
stronger connection with low growth, if the 1980s or the 1990s are considered separately (Table 2). The creation of employment in the non-market oriented service sector is associated with low levels of growth for the whole period of analysis and for the 1980s, but not in the 1990s, when transfers to Objective 1 regions have, in contrast, a stronger association with low growth. This negative connection is, nevertheless, not statistically significant during the 1980s and for the whole period of analysis (Table 2). The overall initial level of employment in the non-market oriented sector is, by contrast, positively associated with growth.

Not all coefficients conform to the hypothesis that more open economies perform better in the longer run. The relationship between the initial levels of employment in advanced services and economic performance is insignificant and, more importantly, the association between the employment growth in this sector and economic performance is significant and negative for the both whole period of analysis and the 1990s (Table 2).

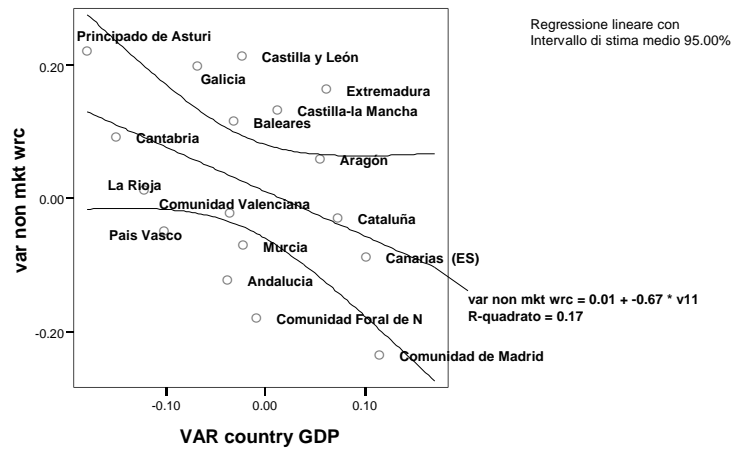
Of special interest is the negative relationship between the growth of employment in the non-market oriented sectors and regional economic performance, in evidence for the whole period of analysis and, more specifically, during the 1980s. Such a negative association seems to hold both for countries whose lagging regions have become increasingly sheltered, such as Italy or Spain, and for a country like France, where this is not the case. Figure 3 plots the relationship between the change in non-market oriented employment and regional economic performance for the period of analysis in Italy, Spain and France, taking 3 years averages of all the variables both at the beginning and at the end of the period in order to limit the possible cyclical effects and

the possible distortions created by annual statistical variations. In all the three cases a robust – although not particularly significant – negative association between both factors is observed. This shows that, on average, losing regions increased their quota of employment in non-market oriented sectors. In the three countries, the regions with the best economic performance coincide with the capital regions (Lazio, Madrid and Île de France) which had in all cases the highest initial level of employment in non-market oriented sectors, but where this sector experienced the strongest relative decline during the period of analysis (Figure 3). This evidence can be interpreted in two ways: on the one hand, it can be that the detachment from the market and lower productivity of employment in the public sector and other non-market oriented sectors contributed to the relative decline of these regions. On the other hand, the causality can be reversed, making the creation of public sector employment a tool used by governments in order to combat economic decline and prevent social unrest in lagging regions. In any case both reinforce the hypothesis that regions relatively sheltered from market forces underperform relative to those more exposed to it.

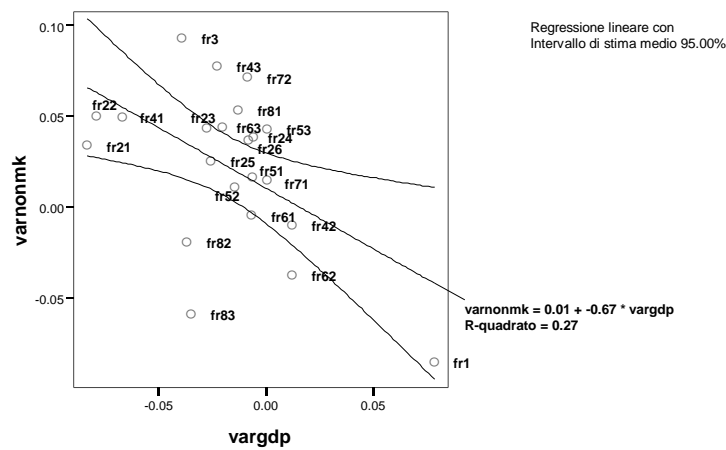
The fact that during the 1990s employment generation in the non-market oriented sector is no longer associated to economic performance is probably related to the limitations and budgetary constraints imposed on governments by the Maastricht treaty. The restructuring of public finance in order to comply with the Maastricht criteria on public deficit and debt meant a serious reduction in the expansion of the public sector, in general, and of public, employment, in particular. This factor could also explain the increasing association of other factors like Objective 1 assistance and unemployment with economic performance (Table 2).



### Italy



### Spain



### France

**Figure 3.** Variation of GDP per capita vs the variation in the importance of non-market services in regional employment.

## Conclusions

This paper was conceived with the aim of addressing two important questions. First, if the evolution of regional disparities was becoming pro-cyclical and leading to the emergence of sheltered economies in the periphery of the EU. And second, if the possible generation of sheltered economies is affecting long-term growth prospects for regional convergence in Europe. We have tested these two questions in the four countries of the Southern periphery of the EU (Greece, Italy, Portugal and Spain), using France as a benchmark country. The results of the analysis have highlighted that there is evidence of an increasing emergence of sheltered economies in the poorest regions of these countries, with the only exception of Greece. The pattern of growth of regional disparities in periods of economic boom and decline in periods of economic decline was established in Italy more than two decades ago. In Portugal and Spain the appearance of a pro-cyclical evolution of regional inequality and of sheltered economies in lagging regions is more recent. No such pattern has been identified in Greece – although there are incipient signs that it may be taking place since 1994 – or in our control country, France.

Our research has also uncovered a link between the genesis of sheltered economies and the relatively poor economic performance of lagging regions. Two indicators point in that direction. First, in the countries where pro-cyclical patterns of the evolution of regional disparities are now established, the relative decline of lagging regions in phases of economic expansion is greater than the relative catch-up in phases of decline. Conversely, richer regions in these countries experience a greater relative growth in

periods of expansion than their relative decline in the downturns of the economic cycle. Second, many of the structural characteristics that define a sheltered region (low levels of employment, high unemployment, dependence on non-market oriented sectors for the genesis of employment and on transfers) are negatively associated with economic performance.

The results of this paper seem thus to confirm that future prospects for many regions in the periphery of Europe are rather bleak. Not only do they seem to be increasingly detached from the market, but this detachment seems to be little by little eroding their capacity to compete in increasingly integrated market, a fact that may ultimately lead to the generation of permanently assisted regions and of the vicious cycles of economic dependency described by Trigilia (1992).

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