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Economic growth and internationalisation in the italian mezzogiorno: The emergence of "lights and shadows" in a european periphery

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VULNERABLE REGIONS IN EUROPE: THE CASE OF THE ITALIAN MEZZOGIORNO

Paolo Guerrieri and Simona Iammarino*

ABSTRACT

In the most recent years, the pattern of economic development of the Italian Mezzogiorno has given signs of a remarkable change in progress. Up to the beginning of the 1990s, the whole area was by and large characterised by a single macroeconomic model of income and employment, whose dynamics were strongly based upon State intervention. The end of the special public support for the Mezzogiorno in the early 1990s – as a consequence of the completion of the Single European Market in 1992 - was followed by a substantial lack of legislative tools for the support of less favoured areas. Since then, the Italian southern regions have gone through a worsening of their economic fundamentals, particularly with regard to income growth and unemployment. Moreover, manifest differentials in the economic development pattern have begun to rise also *within* the southern area, giving shape to what has been labeled “the emergence of more than one Mezzogiorno”.

By using a wide range of both economic and social indicators for the period 1985-1998 and adopting a high disaggregation of the Italian southern territory up to the level of *province* (NUTS3), this paper aims at showing that the economic geography of the Mezzogiorno is somehow more complicated than what used to be traditionally maintained, as strong economic and social differences exist also within the area. The statistical analysis, carried out by means of principal components and cluster analyses, intends also to provide the base for a revision of the label “vulnerable” itself.

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VULNERABLE REGIONS IN EUROPE: THE CASE OF THE ITALIAN MEZZOGIORNO

by Paolo Guerrieri and Simona Iammarino*

1. Introduction

Within the European arena, the heterogeneity of socio-economic conditions among Italian regions is a clear example of intra-border imbalances. In fact, the different growth rates characterising the various areas of Italy are far from being an exception in the Union, where diversity across member states is a reflection of domestic socio-economic disparities strongly concentrated in space and reproduced over time.

In the most recent years, the pattern of economic development of the Italian Mezzogiorno has undergone a significant transformation. Up to the beginning of the 1990s, the whole area was by and large characterised by a single macroeconomic model of income and employment, whose dynamics were strongly based upon State intervention. The end of the special public support for the Mezzogiorno in the early 1990s – as a consequence of the completion of the Single European Market in 1992 - was followed by a substantial lack of legislative tools for the support of less favoured areas. Since then, the Italian southern regions as a whole have gone through a worsening of their economic fundamentals, particularly with regard to income growth and unemployment. At the same time, manifest differentials in the patterns of economic development have begun to rise also *within* the southern area, giving shape to what has been labeled “the emergence of more than one Mezzogiorno”.

The obstacles to economic convergence are well known and, in the main, they are rooted in the historical and socio-cultural background of Southern Italy. Public sector’s inefficiency, lack of infrastructures, problems of public order, State-dependence, are all typical “diseases” of the southern regions as compared to the North and the Centre of the country. All these factors couple with other structural aspects seriously curbing the economic performance of the area, among which: inadequate entrepreneurial culture, low technology potential and innovation propensity, scarce services to firms, weak attractiveness towards external resources (i.e., FDI), insufficient

promotion of internationalisation processes, feeble linkages with global markets and networks, etc..

This is all the more worrying insofar as global processes and challenges are likely to strengthen the gap between “ahead” regions and “vulnerable” areas. The idea of a “Europe of regions”, rather than nation-States, has considerably gained momentum, thus reinforcing the need of knowing more about geographical units smaller than the national scale. Not only divergence might increase across and within national EU boundaries, but social and economic marginalisation might become a true sclerosis for some (rather extended) portions of the European population.

The aim of this paper is to help define the concept of “vulnerability” in modern Europe, looking at what has always been regarded as a striking example of *periphery*. The recent emergence of many Italian “Mezzogiorni”, if proved to be actually true, would definitely put in question the relative homogeneity of interpretations and the structure of policy-making implemented in the southern regions. Therefore, a more in-depth analysis of socio-economic indicators might provide the base for a revision of the label “vulnerable” itself. The following section summarises, with reference to the second half of the 1990s, the principal economic features and recent trends of the Mezzogiorno regions within the broader national and EU contexts. Section 3 investigates the extent of the increasing differentiation arising in the Italian South particularly in the late 1990s. The analysis is carried out at the provincial level (NUTS 3) for the period 1985-1998 and the section is subdivided in three paragraphs, reporting respectively the indicators considered, the statistical methodology applied and the results obtained for the 34 southern provinces. Section 4 presents a discussion on the identification of “vulnerable” regions in the EU area, whilst in section 5 some preliminary conclusions and directions for future research are drawn.

2. The Mezzogiorno regions in Italy and in Europe

In 1997 - the last year available for intra-EU comparisons on GDP - 47 regions out of 211¹ showed a per capita GDP (in Purchasing Parity Standards) less than 75% with respect to the

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¹ The source of data on EU comparisons is Eurostat (2000), while in the case of national comparisons is the National Institute of Statistics (ISTAT, various publications and various years). The level of geographical breakdown used in

average (EU=100). The bulk of such “Objective 1 regions” - i.e. beneficiary of the EU financial support right because of the GDP gap - is concentrated in southern Europe, with twelve of the thirteen Greek regions, six of the Portugal’s seven, six in Spain and six in Italy: in the latter case, they correspond to the whole Mezzogiorno, with the exclusion of Abruzzo and Molise.² Italy is also among the member states where the highest per capita GDP is twice as high as the lowest: in 1997, Lombardy was 131% with respect to the EU average, whilst Calabria was 59%. However, it should be reminded that income gaps are even wider in Germany or in the UK: in the latter country, for example, Inner London has a per capita GDP of 233% relative to the Union’s average, actually the highest in the area and more than three times higher than that of West Wales. When looking at the GDP per person employed - as a proxy for productivity levels - the overall picture is slightly more differentiated at both the EU and the Italian level. The eight southern regions are divided into two groups, with only Basilicata, Calabria and Sicily in the lowest category of productivity level (less than 39,000 euros per employee) and the other five in the 39,000-47,500 range, together with part of the Centre and Trentino Alto Adige; the rest of the country is in the 47,500-53,000 class and three regions - namely Lombardia, Liguria and Friuli Venezia Giulia - are in the highest category (more than 53,000 euros per employee).

In 1998, employment rates in Greece, Spain and Italy were well below the EU average (49.9%). The sharpest deviations from the mean (the variation in figures for the member states is as a rule 10 percentage points above and below the average)³ are recorded in France and Italy, where Corse, Calabria and Sicily have very low employment rates (around 30%). The female proportion of employment reflects national cultural differences: the highest (above 50%) is found in Sweden, Denmark, United Kingdom, but also in northern and central Portugal, while Spain, Greece and Italy are ranked at the bottom (the Mezzogiorno and Lazio show percentages below 30%, whilst the Centre-North is between 30-40%). Also the unemployment rate, which in the Union as a whole in 1998 was 10.1%, shows significant variations at the regional level: the most remarkable contrasts are to be found in Germany - with Upper Bavaria at 4.7% and Dessau at 22.3% - and, even to a larger extent, in Italy, where Trentino-Alto Adige shows 3.3% whereas Calabria reaches almost 27%. More generally, unemployment rates above 20% (the double of the

this section is NUTS 2, which corresponds, according to the new version of such a classification (NUTS99), to the European “standard regions”.

² Contrary to the rest of the Italian South, Abruzzo and Molise have not been anymore subject to Objective 1 since the end of the 1990s.

The other regions below 75% of the EU average are: 8 of the new Bundesländer in Germany, 3 in the United Kingdom (Cornwall, West Wales and Merseyside), 1 in Austria (Burgenland) and the overseas departments and Languedoc-Roussillon in France.

³ See Eurostat (2000).

EU average) are also recorded in most Spanish regions and in the eastern part of Germany. The real exception in southern Europe is again Portugal, where unemployment registers even its minimum value at the EU level (in the Centro area, with 2.1%).

Yet, during the 1990s, the gap between the Mezzogiorno and the rest of Italy has substantially increased in terms of both employment and unemployment rates. The latter, in the eight regions of the South, raised from 14.5% in 1985 to 22.8% in 1998 (against a decline from 8.7% to 7.5% exhibited in the same period by the Centre-North), whilst the rate of youth unemployment recorded an increase of 8.7 percentage points in just five years (1993-97), going from 47.8% to 56.3%, against an increase of just 0.3 points in the northern and central regions (from 21.7 to 22%). Calabria holds the sad lead in the EU in terms of unemployment rates among young people: 72.3% in 1998. On the other hand, the growth of employment observed in the area as a whole since the half of 1997 has been strongly concentrated in only two regions, namely Campania and Sicily, which accounted for 95% of the overall employment growth in the southern area.⁴ Moreover, in 1998 regional unemployment rates differed significantly also within the South as a whole, going from 9.6% of Abruzzo to 26.8% of Calabria (whilst the national average was 12.3%).

The “lights and shadows” characterising the South of Italy arise also with respect to the composition of employment by type of economic activity. In 1998 the share of services on total employment in the Mezzogiorno was much higher than that of manufacturing (43% and 12% respectively), highlighting a relative dynamism of the service sector in the South also when compared with the northern and central regions. However, a more detailed analysis shows that the bulk of service activities is indeed concentrated in the most traditional services – such as retail and whole sale trade, transports, etc. – whilst dynamic sectors, such as information technology services or financial and insurance services, are still on a rather small scale (Svimez, 1999; Farella 2000).

Besides, the rising share of services has not implied a sound economic restructuring, as occurred in the case of the North and the Centre of the country and in most Europe. The specialisation pattern in the Italian Mezzogiorno still reveals a low demand of inputs from the service sector as a whole, showing at the same time a rather limited integration of production and downstream phases - such as commercialisation, distribution, marketing and so forth - which is necessary for the taking off of both diversification and product innovation processes. Indeed,

⁴ A positive trend has been recorded by the country as a whole in the last years, with a national unemployment rate slightly below 11% in 2000, though the geographical breakdown of unemployment has remained almost unchanged.

looking at a more detailed geographical level, as from the data published by ISTAT on Local Labour Systems (LLSs),⁵ the Mezzogiorno is characterised by a massive presence of “without specialisation” LLSs, i.e. local systems which lack a specific sectoral profile or whose sectoral specialisation is not connected to any particular location factor, therefore also identifiable as “systems without quality” (ISTAT, 2000). The share of southern Italy on the total number of such a type of LLSs is 74% (229 out of 311), mostly concentrated in the least favoured regions of Calabria, Sicily and Sardinia, and they account for 43% of Mezzogiorno’s population (whereas in the North-west, for instance, “without specialisation” LLSs represent only 6.2% of the resident population).

Indeed, the structural differences amongst EU regional economies, along with different policy orientations, have provide some reasonable explanations to the convergence trends followed by the European peripheries (Paganetto, 1997). Ireland, for example, has been the most “virtuous” example among Objective 1 regions, undertaking policies strongly orientated at improving the overall attractiveness and shifting specialisation towards high-tech industries. However, this has led to a break with the previous industrial structure, based on traditional and labour-intensive sectors, providing the background for a possible growing differentiation between the various parts of the country. Conversely, Portugal has adopted an approach largely directed towards the restructuring of traditional productions, which has brought about - to an even greater extent than in the Spanish regions - sharp increases in both productivity levels and export propensity.

Yet, another quite impressive feature of the Mezzogiorno, recently highlighted by the literature, has been the progressive decrease of the average firm size. This has involved all classes of dimension in spite of the opposite trend which has instead characterised the rest of the Italian economy. Such a *downsizing* process has been, at least in part, the explanation underlying the newly observed higher returns of southern firms (Giannola, 2000), which indeed are mainly due to the reduction of production scales, thus constraining the exploitation of increasing returns similar to those achieved in other Italian regions.

Even in the case of the most dynamic exporters in the area, small and medium enterprises (SMEs) in the South are comparatively disadvantaged *vis à vis* small firms in the rest of the country. Indeed, the competitiveness of SMEs in the Italian experience has been the highest where agglomeration economies have given rise to actual local systems – as is typically the case

⁵ The identification of Local Labour Systems is based on the aggregation of geographical units such as Communes (in the Italian case), according to the daily movements of resident population for work purpose (commuters), to

of the industrial districts located in the North and in the Centre - which represent the core of the “made in Italy” in terms of international performance. The effects of dynamic agglomeration economies - both at the level of firm (internal economies) and industry (external economies) - are likely to affect growth rates more than simple unit costs of production and have been recognized as central to enhance the efficiency and the growth of firms in the local system and their reaction to the rapid change brought about by the global competition (Guerrieri and Iammarino, 2001a). Yet, the substantial lack of such factors verified in the Italian Mezzogiorno is one of the most worrying aspects of the North-South gap, severely restraining SMEs’ development in the area. Another drawback of both the scarcity of systemic relationships and the *downsizing* process has been, as stated above, the low intensity and variety of demand for additional services - particularly those related to the new Information and Communication Technologies (ICTs) - along with the already mentioned scarce integration between production and services, which has adversely affected also organisational change and innovation.

Besides, the relative weakness of demand for subcontracting from southern firms (only 23%, against a national average of 35%), apparently confirms the greater vertical integration of production processes in the South of Italy - particularly evident in the case of SMEs - which clearly suggests the presence of external diseconomies. On the other hand, the high weight of the hidden economy gives an additional indication of the difficulties of inter-firm relationships of a systemic type (Giannola, 1999, 2000).⁶

The analysis of the patterns of trade specialisation in the second half of the 1990s further corroborates the emergence of more than one Mezzogiorno. In fact, as emphasised by some empirical works (Conti, 1995; Conti and Menghinello, 1996; Lolli, 2000), in spite of the tendency to converge shown by the export structure of the South with respect to the national pattern during the first half of the 1990s, an increasing distinctiveness of specialisation features within the area can be highlighted with reference to the last years. In general terms, whilst some southern regions (or parts of them) have experienced a re-orientation of the export specialisation patterns towards higher value added sectors - such as machinery and equipment, motor-vehicles and other means of transport, textiles and clothing -, other provinces (mainly concentrated in Calabria, Sicily and Sardinia) have shown a strengthening of their specialisation in traditional and slow-growing sectors. Moreover, in terms of export dynamism, some areas have registered a

which an algorithm of self-containing was applied. For the methodology used see ISTAT (1997).

⁶ A good indicator of the share of the hidden (or “black”) economy is given by the comparison between turnover per employee and value added per employee, the latter being much lower than the former in most southern regions. This fact emerges with particular evidence in traditional sectors and in the smallest dimensional classes of firms.

strong increase in the ratio exports/value added (for example Abruzzo, Campania, Puglia), whilst others have shown a worrying stagnation (i.e. Sicily and Sardinia).⁷

It is also interesting to note that, among the various factors which have contributed to affect the competitiveness of southern firms over time, the worsening of productivity *vis à vis* that in the rest of the country has had a remarkable weight. In fact, in spite of the lower labour cost per employee (less than 20% on average, and even lower with reference to SMEs and traditional sectors), the differential (with reference to the rest of Italy) between value added per employee' ratios is indeed wider, leading to a labour cost per unit of value added higher than in the North and in the Centre. This has obvious implications in terms of employment perspectives, investment expansion and overall competitiveness.

Notwithstanding such "shadows", in 1998 the contribution of the Mezzogiorno to national exports was 10.2%, from 9.6% in 1997, highlighting the stability of the increasing trend.⁸ Furthermore, it has been pointed out that the outstanding growth of sales towards the European Union markets, which has interested especially mechanical equipment (including high-technology sub-sectors) and motor-vehicles, has originated not only from large (national and multinational) firms' plants - such as FIAT in motor-vehicles or Texas Instruments in electronics - but also from "autochthonous" firms (mainly in Abruzzo and Campania) whose competitiveness has been remarkably strengthening over time (ISTAT-ICE, 1999).

Looking at another indicator of internationalisation, the marginal role of the South as a location for foreign direct investment goes further beyond that of the country as a whole, which has undoubtedly shown a deterioration of its comparative attractiveness relative to other industrialised economies especially during the 1990s.⁹ At the end of 1997, the Mezzogiorno as a whole accounted only for 11.6% of total plants with foreign participation in Italy, and for 13.8% in terms of foreign subsidiaries' employment, whilst the share of foreign investment inflows in the same year was just 1.3% of total inward FDIs in the country. The geographical distribution of such inflows stresses once again the existence of strong differences within the area: the relatively relevant amount attracted by the Campania region, with an inflow of 36 billion of lira, corresponds to a 100 times smaller amount in Calabria (360 million). On the other hand,

⁷ For a more in-depth analysis of the internationalisation process in the Italian Mezzogiorno at the regional and provincial levels see Guerrieri and Iammarino (2001b).

⁸ The favourable trend has been going on and in 2000 the share of the Mezzogiorno on national exports reached 11.1%, with an increase of 27.3% with respect to the previous year. In the context of this section we have referred particularly to 1998 to be consistent with the following analysis carried out at the provincial level, for which the last year considered (because of limited data availability) is usually 1998.

⁹ The Italian share on the world FDI stock decreased from 3.3% in 1990 to 2.3% in 1997 (UNCTAD, 1999).

however, a positive trend has been recorded by the share of the whole area on new (newly created or acquired) plants controlled by foreign investors, which increased from 8.9% of the national total in the period 1986-89 to 15% in 1994-97 (Mariotti and Mutinelli, 1999).

Among the reasons underlying the lack of convergence of Italian southern regions towards the national and the EU average, probably one of the most important has been the strong gap in technological endowment and innovation capacity. The literature on the evolutionary nature of technological change highlights the endogenous, cumulative and path-dependent nature of the innovation process, which depends also upon social, cultural and institutional factors. The role of technology, innovation and knowledge has thus become central in explaining convergence processes among regions,¹⁰ leading to the general conclusion that quite rarely such processes may start spontaneously in the absence of a “critical innovative mass”.

Indeed, data on innovation at the EU level reveal a strongly differentiated picture in the integrated area, confirming the existence of significant gaps among regions. In terms of R&D expenditure (as percentage of GDP), the Italian South shows a great diversity: in 1997, the only southern region above 1% (EU average=1.89%) was Abruzzo, followed by Campania, Sicily and Sardinia - in the range between 0.5 and 1% - whilst the other four regions were below 0.5%. The differentiation decreases in terms of R&D employment (as percentage of active population): with the exception of Lazio, the whole country is below the EU average (1.27%); Abruzzo is the only southern region in the range between 0.7 and 1.2%, whilst the rest of the Mezzogiorno is below 0.7%. Needless to say, also in terms of number of European patent applications the bulk of the less innovative EU regions is concentrated in the southern part of the Union (Greece, southern Italy, Portugal, Spain).

In 1997, the share of the Mezzogiorno on total national R&D expenditure was less than 15%, the bulk of which concentrated in just three regions, namely Campania (5.6%), Sicily (3.2%) and Puglia (2.2%). More importantly, the low share of the South becomes even lower with reference to the R&D expenditure of the business sector, representing only 8.1% of the national total. The same proportion is found for R&D personnel figures: in 1997, southern regions accounted for

¹⁰ During the 1990s, a large number of studies addressed this issue for the EU regions (see, for example, Fagerberg and Verspagen, 1996; Breschi, 1997; Verspagen, 1997; Fagerberg, Verspagen and Caniëls, 1997; Paci and Usai, 1998; Caniëls, 2000). It turned out that the process of convergence in GDP across the EU regions, which was observed during most of the post-war period up to the 1970s, is far from being stable and, even accounting for differences in industrial structure, it has tended to slow down since the second half of the 1980s. By considering the differences in innovative capabilities across European regions - even more pronounced than at country level - it has been shown that they account for a good deal in explaining the diverging trends in economic growth (Fagerberg and Verspagen, 1996).

18.7% of total R&D personnel and 9.3% of that of the business sector. The technological backwardness of the South is further supported by another indicator, namely national patent applications. In 1996, the share of the Mezzogiorno on the Italian total was only 6.1%, with a number of patent applications per million inhabitants which ranged from 45.6 in Abruzzo to 2.2 in Calabria (the national average is 49.1): just to quote an illustrative comparison, the same figure for Lombardia was 96.4.

3. “Lights and shadows” in the Italian Mezzogiorno: an analysis at the provincial level

The eight regions of the Italian Mezzogiorno are currently subdivided into 36 provinces (corresponding to the level 3 of the NUTS classification), two of which received the status of province only in the late 1990s: therefore, for the sake of comparison through time, Vibo Valentia and Crotona (both in the region of Calabria) are considered together with the province of Catanzaro, in which they were included before the administrative change. The 34 southern provinces taken into account in the following analysis and their acronyms are reported in Appendix 1.

3.1 Data and indicators by province

A large set of variables was used to build up 25 indicators of both social-systemic conditions and economic performance for the 34 provinces of the Italian Mezzogiorno in the period 1985-1998. As well known, data availability at the subnational level is still rather constrained even for the NUTS 2 regions, thus international comparisons at the level of province would be rather tricky, if not impossible, at least with a large number of variables. The source of data used in this paper is the Italian National Institute of Statistics, whose data collection by detailed geographical unit is one of the most advanced in Europe. The list of indicators is reported in Appendix 2, providing the name and abbreviation for each indicator and its definition in terms of the variables used to build it. Obviously, the use of absolute numbers was avoided for the purpose of weighting each province relatively to its economic or demographic size. For many variables the whole series 1985-1998 was accessible, therefore we could observe the trend, also ensuring that the first and the last year considered in the analysis were not anomalous with respect to the normal course. In some cases, only some years were available (for example, for the indicator CREDIT, where the years for bank investments are 1990 and 1997); in other cases, some

variables were not available up to 1998, thus the last year obtainable (usually 1996) was used as a proxy.

It is interesting to give an overview of the dynamics which have characterised the southern provinces in the period considered, with particular reference to the indicators which can be confronted with those described for the regions in the previous section.

In order to provide a first indication of the main inter-provincial differences, coefficients of variation (Cvar) were estimated for all indicators listed in Appendix 2. In 1998, the highest coefficients of variation are generally found for the indicators related to the economic performance: the variance is particularly high for the average size of firms, normalized trade balance, export per employee, unemployment rate and patents. More importantly, between 1985 and 1998 the Cvars have substantially increased for many of such indicators, giving a sign of a relatively wider distance between the provinces with a better economic performance and those less advanced. The social or “systemic” indicators, instead, show on average considerably lower inter-provincial differences, both at the beginning and at the end of the period: some exceptions are represented by the crime rate, the expenditure for public works and the public support for integration of earnings, whose variation coefficients are quite noticeable.

Looking more in detail at firms’ performance, the overall increase in the average size of local units in manufacturing registered between 1985 and 1998 couples with a remarkable increase in the Cvar. However, the rank of provinces in the first and the last year here considered is substantially unchanged, insofar as the provinces with the lowest values of the index are still those of Sicily, Sardinia and Calabria. A notable exception is Isernia (Molise), at the bottom of the scale in 1985 and among the firsts in 1998, as local units there located increased their size by a factor of four: the *upsizing* process has been noteworthy for the region as a whole, as also Campobasso has experienced a quite sharp growth of the average firm size. The picture is confirmed by the indicators reflecting the relative importance of very small firms (below 50 employees). Not only has the inter-provincial gap risen over time, but whilst in 1998 the index shows much lower values for all provinces in Abruzzo, Molise and Basilicata and for some in Puglia, Campania and Sardinia, in the provinces of Sicily and Calabria the values are substantially higher and increasing over time. This can give some kind of support to the fact that the *downsizing* process mentioned above is likely to have affected the weakest provinces, where inefficiency has constrained the exploitation of increasing returns to scale.

Such a picture is further corroborated by the index of value added per employee in manufacturing. Whilst in 1985 the provinces with the highest values of the index are those

showing at the same time remarkable shares of value added in manufacturing (on total value added) and relatively low manufacturing employment (i.e. L'Aquila, Isernia, Avellino and Chieti), in 1998 the top ten provinces are those displaying modest manufacturing shares of value added (which has anyway shrunk dramatically at the country level), having experienced an even greater contraction of the overall employment in the sector (i.e. Agrigento, Enna, Messina, Palermo and Catanzaro, all of which are, not incidentally, at the top of the rank in terms of unemployment rate).

As already pointed out, the indicators linked to the international trade performance manifest very high Cvars and, in the case of the normalised trade balance, even increasing between 1985 and 1998. The latter indicator provides a measure of the degree of imbalance of trade exchanges (the value varies between -1 and +1) and it is often used for comparisons over time and space. The net exporter and most competitive local systems in 1998 are in Molise, Basilicata and Puglia (with the exception of the province of Brindisi), in some areas of Campania (Caserta and Naples, which in 1985 had negative trade balances) and Abruzzo (Teramo and Chieti, the former being a new industrial district specialised in clothing). On the contrary, Calabria as a whole, Sicily (with the exception of Palermo) and Sardinia (but the province of Nuoro) display negative indices (in most cases, moreover, trade balances are negative throughout the period). Exports per employee do confirm the potential for competitiveness on international markets at the provincial level: the most notable changes in the 1985 and 1998 ranks - in terms of an escalation of their relative positions - are those of L'Aquila (in spite of a still slightly negative normalised trade balance in 1998, though improving over time), Palermo and, outstandingly, Potenza, which in 1985 was at the bottom of the rank in the very last position and with a negative trade balance, whilst in 1998 is in the top ten highest export per employee positions, showing also the highest positive trade balance of the whole Mezzogiorno. It is worth to note that, in both the first and the final year under observation, the province of Siracusa (Sicily) ranks first in terms of export per employee.

Even at a first sight, this picture seems to corroborate the remarkable and growing differentiation within the southern area highlighted in section 2. In general terms, it appears that the provinces with a better performance in terms of international trade are those characterised by a relatively marked presence of specialised local systems. Indeed, this seems to be in line with the fact that the notable growth of exports registered in the first half of the 1990s by the overall Italian system has interested to a much greater extent firms in local systems or actual industrial districts, exporting both to EU and extra-EU markets, than the average of SMEs operating in Italian manufacturing (Istituto Tagliacarne and Unioncamere, 1997). In order to achieve a more

precise view of such a crucial aspect, an in-depth analysis of trade specialisation patterns by province of Mezzogiorno over the same period is currently in progress (Guerrieri and Iammarino, 2001b).

As far as the unemployment rate is concerned, the Cvar has increased over time, in spite of the growth in the mean for the whole South. The rank is obviously inverted with respect to the previous indicators: in the top ten we find some of the largest provinces of Sicily, such as Catania and Palermo, all Calabria's provinces, the big urbanised provinces of Naples and Caserta in Campania and Lecce in Puglia. At the other extreme, all Abruzzo's provinces show the lowest unemployment rates (as already said for the region as a whole, with a lower rate than the national average), with a rather mixed group - the two provinces of Molise, part of Campania (Benevento and Salerno) and also two Sicilian provinces, namely Trapani and Ragusa - with rates substantially lower than the Mezzogiorno's average.

The only indicator available for innovation at the subregional level is per capita national patent applications. In this case a rather blurred representation do emerge from the indices. On the one hand, whilst inter-provincial difference have declined over time, the most innovative provinces are almost the same in 1985 and 1998, namely Pescara and Teramo (Abruzzo), Napoli (Campania), Bari (Puglia), Cagliari (Sardinia), Ragusa, Catania, Palermo, and Messina (Sicily). This seems to indicate the relevance of a local "critical mass" for innovative processes to be undertaken, suggesting also that innovation cumulateness and persistence over time is difficult to be reversed. It is striking the upsurge of Isernia (Molise) which, once again, has climbed the ranking from the very bottom to the top ten over the period considered. On the other hand, the variance of the index is one of the highest amongst all indicators and, although the most innovative systems coincide by and large with big urban centres, the provincial order is not that which would be obviously suggested by all other performance indicators. With reference to 1998, Sicily shows a very differentiated profile, with some provinces at the top of the scale and the others scattered along the distribution; the provinces of Calabria are all below the southern average but closer to economically stronger systems such as Campobasso and L'Aquila; the least innovative geographical units are mostly concentrated in Puglia (Taranto, Brindisi and Foggia), Sardinia (Nuoro and Sassari) and Basilicata (Potenza and Matera).

It is interesting to briefly report some of the social and systemic features of the 34 provinces of the Italian South. The per capita government expenditure for public works, which shows a high and growing Cvar, is rather homogenous within each region. Values far below the Mezzogiorno's average are found for all provinces in Puglia and Sicily (with the notable

exceptions of Siracusa and Trapani), whilst the highest are those of Molise and Basilicata. A common feature of the area as a whole is instead the proportion of women enrolled in job lists: inter-provincial differences are almost non-existent, reflecting a relative homogeneity of the South in this respect. Another crucial indicator is the crime rate: here the variance is quite high, although decreasing between 1985 and 1998, and at the top of the rank 1998 we find the big urban centres of Napoli, Palermo, Cagliari, Brindisi, Pescara and Caserta. Allowing for the fact that this indicator shows quite evidently a bias towards the main provincial towns, it is true that the provinces with the highest and the lowest crime rates were by and large the same in both the first and the last year considered, reflecting a rather stable pattern of such a context variable. Indeed, at the bottom of the scale there are the provinces of Molise and Basilicata, part of Abruzzo (L'Aquila and Chieti) and some of the provinces of the most "risky" regions such as Benevento and Avellino in Campania and Agrigento and Enna in Sicily.

It is important to highlight that, according to the literature, problems such as crime rate and environmental decay are serious constraints to the overall economic activity and seem to be perceived as relevant factors underlying the scarce attractiveness of the South towards foreign direct investment (for instance, in the case of Texas Instruments' choice to locate in Abruzzo rather than in Campania). Organised crime does not affect much big multinationals, insofar as their dimension, organisation structure and visibility make them far less vulnerable to blackmails of organised crime than local SMEs. It has been shown that one of the positive effects of multinational presence in southern locations has been the transparent selection of local subcontractors (de Vargas Machuca *et al.*, 1999).

Finally, it is worth to note that the indicators of the health-care system are amongst those where the provincial ranking is most stable through time, though the hospital endowment, relative to the resident population, seems to have somehow deteriorated over the period considered (the average for the whole South having substantially decreased between 1985 and 1998). The best equipped provinces, with respect to both beds in hospitals and per capita doctors in 1985 and 1998, are Isernia, Cagliari, L'Aquila, Benevento and Bari, whilst the worst health-care supply is found in Trapani, Siracusa, Agrigento and Oristano.

3.2 The methodology

The analysis based on simple indicators has the disadvantage of missing the interdependencies which can possibly exist among them. It is feasible to obtain new summary-variables (or global variables) which sum up all information available through linear

combinations, highlighting at the same time the interdependencies among the initial variables (our indicators). The aim is to identify a context - which could be depicted on a Cartesian plane - within which each individual (province) can be positioned with regard to all economic, cultural and social characteristics.¹¹

Factor analysis is a statistical technique used to identify a small number of factors (variables) that can be utilised to represent geometrically relationships among sets of many interrelated variables. As the variables considered (our indicators) are quantitative, the method here applied is the Principal Components Analysis (PCA). The first step was the choice of the variables to be included in the PCA through the computation of the correlation matrix and the associated statistical tests: indeed, the variables must be correlated with each other for the factor model to be appropriate since, if the coefficients of correlation are small, it is unlikely that they share common factors (Mariani and Zeli, 1995). After the analysis of the correlation matrix for 1998, the evaluation of the appropriateness of the model and the factor extraction (through a stepwise and backward procedure) have led to the identification of 14 active variables - which determine the construction of the x and y axes -, whilst the others 11 were used as illustrative variables, i.e. projected on the geometrical plane but not included in the axes construction. The use of the first two factors (axes) - uncorrelated (orthogonal) and labeled according to economic criteria and literature-based interpretation - has thus allowed the geometrical representation of both the original variables (indicators) and the individuals (34 provinces) on a Cartesian plane.

Such a methodology was actually applied to both 1998 and 1985: in the latter year, the same 14 variables as in 1998 were used as explanatory variables, giving significant results rather similar to those achieved for 1998.¹² However, strictly speaking, the PCA does not allow for intertemporal comparisons, as the factors extracted do not summarise the original variables exactly in the same way at two different points in time. In order to allow for intertemporal comparison, different attempts were made: the most significant results were obtained by means of a “compromise plane”, that is, based on a matrix with 68 individuals (34 provinces in 1985 and 34 provinces in 1998) in column and 14 active variables in row (the other 11 variables were again included as illustrative). The PCA on the new matrix was then performed, attaining a

¹¹ Assuming that we want to represent the statistical individuals - in our case the Mezzogiorno's provinces - with respect to the 25 indicators, they would be depicted only in a space of 25 dimensions. The creation of a manageable two-dimensional space implies the necessity to minimise the distortions of such a reduction in the number of variables, which is what the PCA methodology allows for.

¹² For 1985 the percentage of variance explained by the first two factors was lower than for 1998, although the correlation coefficients between the original variables and the factors allowed, by and large, for the same interpretation of the axes. In the following paragraphs only the results for 1998 are commented; detailed PCA results for both 1998 and 1985 are available on request from the authors.

picture where also the “time” dimension is taken into account. Notwithstanding the caveats implied by such a statistical device, we do believe that the graphical representation obtained is a simple and effective way to depict the evolution of our geographical units over time, as it also fits quite well in the insights gathered from the most recent literature.¹³

The last methodological step was the identification of groups, or clusters, by means of a Cluster Analysis (CA) based on the two factors obtained from the PCA on the compromise matrix (therefore, on the basis of the 14 variables considered as active).¹⁴ This exercise has added further elements to the analysis here carried out which, within its limits, provides rather interesting intuitions to the ultimate objective of our work - i.e. to obtain criteria for a more precise definition of regional vulnerability.

3.3 The results

The PCA applied to 1998 represents quite effectively the information content of the original variables. The first principal component (factor) explains 30% of the variance, whilst the second adds a further 26%: the total estimated variance attributable to the first two factors is thus 56%, which is a fairly good result and confirms that a two factors model can be adequate to represent the data graphically.¹⁵ The factor loading - i.e. the matrix of correlation coefficients between the factors and the variables - allowed the interpretation of the axes: the representation of the variables (14 active in red, 11 illustrative in black) with respect to them is reported in Figure 1.

[Figure 1 here]

The *x* axis has been labeled “Industrial development” and it is strongly characterised by the juxtaposition of the average firm size and the share of employment in industry on the negative (left) hand of the horizontal axis, and the share of unemployment and value added per employee

¹³ As already stated, different attempts of intertemporal comparisons were performed, trying for example to include in different ways the factors and the co-ordinates of the individuals extracted from the 1985 PCA as illustrative variables in the 1998 PCA, but none of these results was satisfactory. The use of the Multiway technique was prevented by the fact that time series were not available for all indicators considered.

¹⁴ The method used for the cluster analysis is that of Ward, an agglomerate hierarchical clustering in which clusters are formed by grouping cases into bigger and bigger clusters until all cases are members of a single cluster (cfr. also Zeli, 199?).

¹⁵ The value of the Bartlett’s test of sphericity, used to test the hypothesis that the correlation matrix is an identity matrix, is 260.091 [sig. 0.00000], therefore H_0 was rejected. The Kayser-Meyer-Olkin (KMO) measure of sampling adequacy is 0.621, which comforts the use of the PCA. The determination of the number of factors to be used in the model is usually based on the inclusion of factors that account for eigenvalues greater than 1, since each variable has a variance equal to 1. However, the first two factors included in our model have a variance of 4.3 and 3.6 respectively, much higher than that of the third one (1.8): we have preferred this restricted model also because our aim was to achieve a simple (bi-dimensional) graphical picture.

on the positive (right) one.¹⁶ More in general, the position of the variables suggests that the more we proceed in the negative direction, the more the provinces are industrially advanced, whilst the least advanced or relatively backward provinces (from the perspective of the industrial potential) should be positioned towards positive values. The y axis has been catalogued as “Systemic characteristics”, as it is marked by positive values of the variables which are linked to the type of local context, social and cultural environment, such as the share of bankrupt, the crime rate, patent applications, the share of services, per capita circulating vehicles, the expenditure for cultural activities. Thus, the upper (positive) side of the vertical axis is likely to represent large, highly urbanised provincial systems, whilst the lower (negative) bound suggest the presence of medium-small provincial centres with a lower degree of metropolitanised kind of structure.

[Figure 2 here]

Such an interpretation is further supported by the representation of the position of the individual provinces with respect to the two factors or axes (Figure 2). In the IV quadrant of the diagram we find local systems with a high level of industrialisation, i.e. an economic development which has been basically manufacturing-pulled, and rather low unemployment; the system characters are those of rather large and highly urbanised provinces. Indeed, almost the whole Abruzzo is represented in this quadrant, with the only exception of Chieti, which however is on the edge with the III quadrant. The latter is characterised by the same relatively high industrial development, but the type of local context is rather that of medium-small industrial centres. Here, in fact, the two provinces of Molise and the two of Basilicata are positioned, together with part of Sardinia (Oristano and Nuoro), Puglia (Taranto and Brindisi) and Campania (Benevento and Avellino). The II quadrant shows the combination of lower industrial potential, i.e. a less efficient firms’ sector, and systemic characteristics more typical of medium-small, in some case relatively rural, provincial centres. Calabria as a whole is collocated in this quadrant, along with some of the least urbanised areas of Sicily (Caltanissetta, Agrigento and Enna), and Caserta and Foggia. In the I quadrant we found mainly large towns, where local development has been relatively less based on manufacturing activities, the share of services is relatively high and the type of system is that of big urban centres. This is indeed the case of towns such as Naples, Bari, Cagliari, the bulk of the largest provinces of Sicily (namely Palermo, Catania, Trapani, Messina): in all these provinces the contextual features are prevailing, insofar as the pattern of economic development may be influenced to a greater extent by the type of urban agglomeration,

¹⁶ This is in line with what has been noted above with regard to the latter indicator, which displays its highest values in those provinces which have recorded the most dramatic reduction in the number of employees in the manufacturing sector.

implying higher congestion, unemployment and crime rates as well as stronger financial services, innovativeness and cultural activities.

Turning to the PCA carried out on the “compromise matrix”, as stated above it includes the same 14 active variables (plus 11 illustrative) and 68 individual (34 provinces in both 1985 and 1998). Also in this case, the total variance attributable to the first two factors is rather satisfactory (almost 55%): the first factor explains 37.5% (eigenvalue = 5.25) of the variance and the second illustrates a further 17.4 (eigenvalue = 2.43).¹⁷ The representation of the variables with respect to the factor extracted is shown in Figure 3.

[Figure 3 here]

The interpretation of the *x* axis has been rather straightforward: the active variables are all on the (negative) left hand of the diagram and the correlation coefficients with the first principal component (as also shown by the eigenvalue) are rather high for all of them. This has been intended in terms of a strong “intensity” of both economic and systemic variables on the negative side and of a relative weak “intensity” on the positive hand: therefore, the axis has been labeled “Time” since, as also confirmed by the province projection (Figure 4), all individuals in 1998 show negative value with respect to the first factor, whilst those in 1985 display positive coordinates. The second factor has been called “Type of local system”: as emerges from Figure 3, industrial indicators such as employment in manufacturing, trade balances, average size of firms, as well as some socio-cultural explanatory variables, such as female participation in job seeking or cultural expenditure, characterised the positive (upper) side of the *y* axis; on the contrary, more contextual indicators like the share of employment in services, the share of bankrupts, the crime rate or unemployment rate are on the negative (lower) bound of the diagram. Thus, we expect to find the most developed industrial provinces in the upper quadrant, whilst the least industrially advanced, at the same time constrained in their economic potential by environmental characters, are likely to be positioned in the lower part of the Figure.

This is definitely confirmed by the representation of the provinces, in both 1998 and 1985, in the Cartesian diagram built on these two factors (Figure 4). As argued above, the “presence” or “absence” of variables mark the Time axis, signaling that the indicators have moved together over the period considered. Indeed, the two groups of individuals are sharply distanced: provinces with the suffix 1985 are on the right part of the chart, whilst all the other (the same provinces in 1998) are on the left side. The only notable exception is Pescara, which is positioned

¹⁷ Even in the PCA on the “compromise matrix” the statistical tests on the appropriateness of the model are comforting: the value of the Bartlett’s test is 665.650 [sig. 0.00000], whilst the KMO is 0.7323.

on the “1998” axis even when it shows the suffix relative to the initial year. Yet, notwithstanding the fact that the Italian southern provinces have moved over time all together and, at a first sight, their shift from “1985” to “1998” has not implied striking changes in their positions with respect to the other geographical units, it is evident that the gap between the most developed and the most backward provinces has indeed become wider. This gives further support to the observed emergence of “more than Mezzogiorno” and to the increasing differentiation of the patterns of economic and social development in such a European periphery.

[Figure 4 here]

The interpretation of Figure 4 is all the more facilitated by the cluster analysis. Six clusters were identified on the basis of the two factors of the PCA performed on the compromise matrix. Each cluster - comparable by and large with the grouping of provinces in the four quadrants of Figure 4 - is particularly characterised by some of the 25 variables considered in our analysis: the pseudo-t test and the levels of significance of each indicators in each group (i.e. the variables which significantly characterise the individuals in each cluster, including the illustrative ones) - as resulted from the CA - are used to interpret the grouping, whilst the geographical representation of the clusters is given in Maps 1 and 2.

As also emerges from Figure 4 with respect to the Time axis, in 1985 two clusters of provinces are found (Map 1). The first group includes 21 provinces which correspond to all those of the I quadrant classified as “Industry-inclined local centres” and some of those defined as “Environment-driven”: that is, looking at the unit “region”, the whole Abruzzo (without Pescara), Molise, Basilicata, Campania (without Naples) and Calabria (without Reggio Calabria), plus some provinces of the other three southern regions. The second group gathers 12 individuals, encompassing three out of four provinces in Puglia (only Lecce and Taranto are in group 1), half Sardinia (Sassari and Cagliari), five out of nine Sicilian provinces and those excluded from the regions mainly attributed to the first cluster. The only remarkable exception here is indeed Pescara85, which the cluster analysis identified as a member of the fourth group (thus related to 1998 individuals, as also shown in Figure 4) and that, for the purpose of geographical representation, was treated as anomalous.

[Map 1 here]

Other four different groups of provinces turn out with reference to 1998 (provinces without suffix in Figure 4, each group showing the centre of gravity in the left side of the diagram). The simple fact that the differences that mark out the systems considered have in this case brought to

the identification of four groups lends *per se* support, even at a first glance, to the amplification of distinctiveness within the southern area. Yet, the third cluster, whose centre of gravity is found in the middle of the IV quadrant, is constituted by 6 provinces, including all industrially advanced and most dynamic provinces such as those of Abruzzo (with the exception of Pescara) and Molise, plus that of Potenza in Basilicata. This cluster is characterised by strong economic and industrial features (i.e. high average firm size, export capacity, employment in industry and low unemployment) and by some systemic aspects generally denoting a rather upright standard of living (high expenditure for cultural activities, female enrollment in job lists, per capita vehicles and low crime rates). The fourth group comprehends 17 provinces (including Pescara⁸⁵) marked by rather positive features from both the economic and contextual perspective, which are nonetheless slightly less dynamic than those of the third cluster (the centre of gravity is in the lower-left corner of the IV quadrant). These are the provinces of Campania (but Naples), Puglia (but Bari), Matera in Basilicata and parts of both Sicily (Agrigento, Caltanissetta, Enna, Ragusa and Siracusa) and Sardinia (the two smaller provinces of Nuoro and Oristano). In the fifth cluster, whose gravity's centre is in the III quadrant, we find 9 local systems mostly affected by a low degree of economic potential and industrial development and by strong unemployment, at the same time often showing the features of non-metropolitan systems: the whole Calabria is here included, together with the two main provinces of Sardinia (Cagliari and Sassari), Bari in Puglia and a few Sicilian provinces (Catania, Trapani and Messina). Finally, the sixth groups counts only three systems, which mainly display the features of large urban agglomerations, characterised by high innovativeness, financial facilities, service share of employment, and remarkable crime and bankrupt rates. These are in fact the biggest cities of the Italian South, namely Napoli, Palermo and Pescara. It is interesting to note that the picture here described is largely in line with the results obtained from the 1998 PCA, showing the prevalence of the economic strength or of the environment influence in shaping the type of local system and the grouping of Mezzogiorno's provinces.

[Map 2 here]

4. Vulnerable regions: new criteria for identification?

The analysis carried out above has given support to the idea that to handle the Mezzogiorno periphery as if it was a homogenous socio-economic entity is no longer feasible. Our results have

shown that differences seem to have increased, and that the risks of assuming homogeneity are higher as the gap between the most advanced and the weakest southern areas has become wider.

The exercise here reported, although susceptible of further enhancement, endorses the view of many Italian “Mezzogiorni” which, beyond the possible ways of clustering them, are becoming apart from each other. *Catching-up* and *falling-behind* appear to depend upon a larger set of variables than what usually assumed in the convergence/divergence literature, particularly in contexts where global society and legacy are not yet sufficiently present.

As pointed out in section 2, however, the problem is not only an Italian one. Also at a first glance, differences among EU regions are striking, both in cross-country comparisons and within the national boundaries perspective. Yet, there is a presumption to suggest that relying only on traditional indicators - while trying to identify vulnerable regions with respect to the target of socio-economic cohesion in the EU - may be misleading. Portugal, for example, appears a rather poor country and among the least innovative economies in the area, but unemployment rate in its northern and central regions is amongst the lowest in the Union. This southern European country shows, in some respects, cultural features which make it closer to the northern pattern, rather than to the Mediterranean area. During the second half of the 1990s, in spite of the serious drawbacks of its economic structure, the whole Spain has recorded the highest GDP growth rates in the EU, demonstrating the validity of the *catching-up* hypothesis which, however, is far from being confirmed in the case of other European peripheries such as the Italian South. On the other hand, very high unemployment rates, particularly with reference to youth unemployment, are found in a number of regions in Finland, Sweden and Belgium. Rates of growth far below the EU average are registered in some of the most innovative regions of northern Europe and Scandinavia, whilst the development of GDP per capita has been outstanding in regions where innovation is almost null (at least in terms of indicators such as R&D expenditure and patent applications).

The picture becomes even more complex when looking at intra-periphery differences. The Italian southern regions show on average a per capita GDP higher than the other regions of the South of the Union or those of East Germany. The same applies, even to a greater extent, to consumption levels, which are actually relatively close to those in the Centre-North of Italy, and to public transfers and investments. As seen above, the share of industry on total employment has followed a declining pattern very similar to the rest of the country and much faster than that registered in the other southern members of the EU. On the other hand, the Mezzogiorno as a whole has recorded a remarkable decrease of industrial investment since the beginning of the 1990s, contrary to the efforts for infrastructural development undertaken in Portugal, Greece and

regions such as Andalusia in Spain. Furthermore, the Italian South has a higher level of youth unemployment, is much less internationally opened - in terms of trade, multinational location, sea and air traffic, etc. - and shows a considerably lower efficiency in public administration. Also average growth rates have been far below those registered in Spain and Portugal during the 1990s (Cappellin, 1997; Solima, 1997).

Both static and dynamic gaps arise even more stunningly when considering the Italian Mezzogiorno as a composition of different localities and provincial systems. All this seems to indicate the need to differentiate the “logic of development” (Calafati, 2001). Just a simple exercise as that carried out in the present paper has given some support to the fact that industrially-advanced medium-size local systems have a “logic of development” which is definitely different from that of large metropolitan service-based areas, even located in the same periphery.

How to measure “vulnerability” at the regional level is still a largely shaky question. Thresholds built upon traditional indicators, such as GDP per capita and per employee, unemployment rate, productivity levels, are necessary but not sufficient conditions to be labeled as “vulnerable”. Just to give another example, should we take into account the medium-term effects of the strong asymmetry in the geographical allocation of the Italian public debt that, following the Maastricht criteria, has implied a financial redistribution neatly at the disadvantage of the Mezzogiorno (even accounting for the support received during the 1990s)?

Downsizing of average firm dimension, as low subcontracting and scarce integration between production of goods and services, or between production and marketing/distribution activities, are emerging as incisive factors in determining “vulnerability”. If the main challenge comes from globalisation processes, thus the extent of inter- and intra-firm integration, participation in international networks, organisational innovation capacity, involvement in geographical relocation become unavoidable parameters to assess “vulnerability”. The latter needs to be stated on the basis of additional indicators able to grasp the intensity of networking which acts as an integration mechanism of the local system itself.

Moreover, “social capabilities” are also critical (Abramovitz, 1986), as shown by the fact that “social cohesion” has been strictly linked to economic performance and growth by the EU institutions. The ability of the region to engage in innovative and organisation restructuring, for instance, is part of such capabilities. In fact, it has been stressed that learning dynamics and exchanges of knowledge are usually embedded in distinct environments of interactions among different subjects, sharing common attitudes and institutional settings towards particular types of

learning (Lundvall, 1988). Even the extent to which a region attracts high-value added resources from outside depends first and foremost upon the existing absorptive capacity of the location which, firstly, may be achieved through targeted investments in human capital and skill upgrading, as learning curve advantages are mainly people- and institution-embodied. As large differences in terms of absorptive capacity give rise to a considerable degree of geographical agglomeration, firms will be more competitive, knowledge will flow more easily and economic activity in general will be more spread if higher absorptive capacity exists across space (Cantwell and Iammarino, 2001).

Therefore, social capabilities and institutional contexts have emerged as crucial variables for local development, which also determine the degree of attractiveness and the amount of spillovers that a location is able to draw. Comparable indicators of social and institutional performance are urgently needed. To quote another illustrative example, it has been pointed out that, among the differences characterizing the southern area of the European Union, one remarkable feature distinguishing the Italian Mezzogiorno is the poor degree of political, fiscal and administrative autonomy with respect to the other “Objective 1” countries (Spain in particular). How to cope with the increasing diversity arising within the Italian South if the “logic of development” depends upon decisional cores which are located elsewhere in the country? As always commonly stressed, a further peculiarity of the Italian Mezzogiorno is the inconceivable delay in accessing and utilising the EU structural funds. To what extent and how “vulnerability” should encompass also institutional failure?

To conclude, the periphery is far from being a clear-cut and homogeneous set of local contexts within and across EU national borders. A categorisation without distinctions also at the level of policy strategies would imply the agreement on a single “logic of development”, which has already demonstrated its calamitous effects. This sort of ongoing “national bias” calls for a substantial rethinking of which are the relevant actors, institutions and relationships handling at local level and how the regional “vulnerability” could be more meaningfully picked up.

5. Conclusions

For more than a decade it has been argued that the benefits of the European economic integration were not likely to be evenly spread between regions. The removal of non-tariff barriers, the completion of the single European market and the achievement of the ultimate state

of the monetary integration have spurred the differences between the “core” and the “periphery” of the Union. The typical arguments for convergence - based on assumptions such as the price-cost equalisation mechanism, homogeneity of firms and sectors, positive incentives to locate in the periphery, etc. - have not so far utterly displayed and it is hardly plausible that self-reinforcing regional growth (or decline) may be easily reversed only by centrifugal forces stemming from conventional market mechanisms.

Our aim in the present work was to provide some empirical evidence to the highly and increasing differentiation of one of the most noticeable peripheries of the EU, namely the Italian Mezzogiorno. We are aware that the way of classifying and grouping different geographical units in such a composite area is somehow arbitrary, insofar as it strictly depends, first and foremost, upon the choice of the indicators and of the applied technique. Moreover, it is also indisputable that differences increase in the degree of geographical breakdown and this is true anywhere. However, beyond such methodological considerations, in this case we believe that heterogeneity has come out rather sharply, proving that the emergence of many “Mezzogiorni” is far from being just an hypothesis.

Furthermore, the exercise was performed mainly with the purpose of looking at the policy implications, not addressed here, of such a striking southern diversity. Thus, the analysis reported above constitutes the basis for devising a policy framework within which trying to identify new directions to untangle regional “vulnerability”, with particular reference to the dramatic changes imposed by internationalisation and globalisation process. Further refinement of the empirical evidence is in our short-term research schedule, particularly in the direction of investigating to what extent the evolution of export structure and performance by province fits in the picture of growing differentiation highlighted in the present work. The ultimate target remains how to start up the process of involvement in the global economy of vulnerable regions and how to avoid that social and economic marginalisation may turn into a never-ending sclerosis.

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Appendix 1 - THE REGIONS AND THE PROVINCES OF THE ITALIAN MEZZOGIORNO

REGION (NUTS 2)	PROVINCE (NUTS 3)	ACRONYMS
ABRUZZO	L'Aquila	AQ
	Teramo	TE
	Pescara	PE
	Chieti	CH
MOLISE	Isernia	IS
	Campobasso	CB
CAMPANIA	Caserta	CE
	Benevento	BN
	Napoli	NA
	Avellino	AV
	Salerno	SA
PUGLIA	Foggia	FG
	Bari	BA
	Taranto	TA
	Brindisi	BR
	Lecce	LE
BASILICATA	Potenza	PZ
	Matera	MT
CALABRIA	Cosenza	CS
	Catanzaro	CZ
	Reggio di Calabria	RC
SICILY	Trapani	TP
	Palermo	PA
	Messina	ME
	Agrigento	AG
	Caltanissetta	CL
	Enna	EN
	Catania	CT
	Ragusa	RG
	Siracusa	SR
SARDINIA	Sassari	SS
	Nuoro	NU
	Oristano	OR
	Cagliari	CA

Appendix 2 - INDICATORS BY PROVINCE (NUTS 3) OF THE ITALIAN MEZZOGIORNO

1	AVSIZE=AVERAGE SIZE OF FIRMS	Employment in manufacturing / Local units in manufacturing
2	VSE= SHARE OF VERY SMALL FIRMS	Employment in manufacturing in class 1-49 / Total employment in manufacturing
3	VAEMP=VALUE ADDED PER EMPLOYEE	Value added of goods for sale / Total employment in manufacturing
4	SERVI=SHARE OF SERVICES	Value added of services for sale / Total value added
5	AGRIC=SHARE OF AGRICULTURE	Value added of agriculture / Total value added
6	TRADE=NORMALISED TRADE BALANCE	Export-Import / Export+Import
7	EXPEMP=EXPORT PER EMPLOYEE	Export / Total employment in manufacturing
8	ENER=ENERGY CONSUMPTION	Energy consumption / Resident population
9	BIRTH= NORMALISED BALANCE OF FIRM BIRTH	Registrations-Cancellations / Registrations+Cancellations
10	BANKRU=BANKRUPT RATE	Failures / Registrations
11	ACTRA=ACTIVITY RATE	Total labour force / Resident population
12	UNEMP=UNEMPLOYMENT RATE	People looking for job / Total labour force
13	EMPIND=INDUSTRY EMPLOYMENT	Employment in manufacturing industry / Total employment
14	PUBEXP=EXPENDITURE FOR PUBLIC WORKS	Public expenditure for public works / Resident population
15	STUDENT=RATE OF LICENCED STUDENTS	Students with high school degree / Enrolled tudents
16	CULTEXP=EXPENDITURE FOR CULTURAL ACTIVITY	Cultural activity expenditure / Resident population
17	CRIME=CRIME RATE	Denounced crimes / Resident population
18	CIG=PUBLIC SUPPORT FOR INTEGRATION OF EARNINGS	Authorised CIG hours / Total employment
19	FEMJOB=FEMALE JOB ENROLMENT	Females registered in job lists / Total number of people registered in job lists
20	PATENT=PATENT APPLICATIONS	Patent applications / Resident population *1000
21	CREDIT=BANK INVESTMENT	Bank investment / Total value added
22	PENSION=PENSION EXPENDITURE	Pensions (amount) / Resident population
23	HOSPIT=BEDS IN HOSPITAL	Beds in hospitals / Resident population *1000
24	DOCTOR=NUMBER OF DOCTORS	Doctors / Resident population *1000
25	VEHICLE=CIRCULATING VEHICLES	Circulating vehicles / Resident population

Source of data: ISTAT, various publications, various years

Figure 1 - PCA ANALYSIS 1998 - VARIABLES PLANE

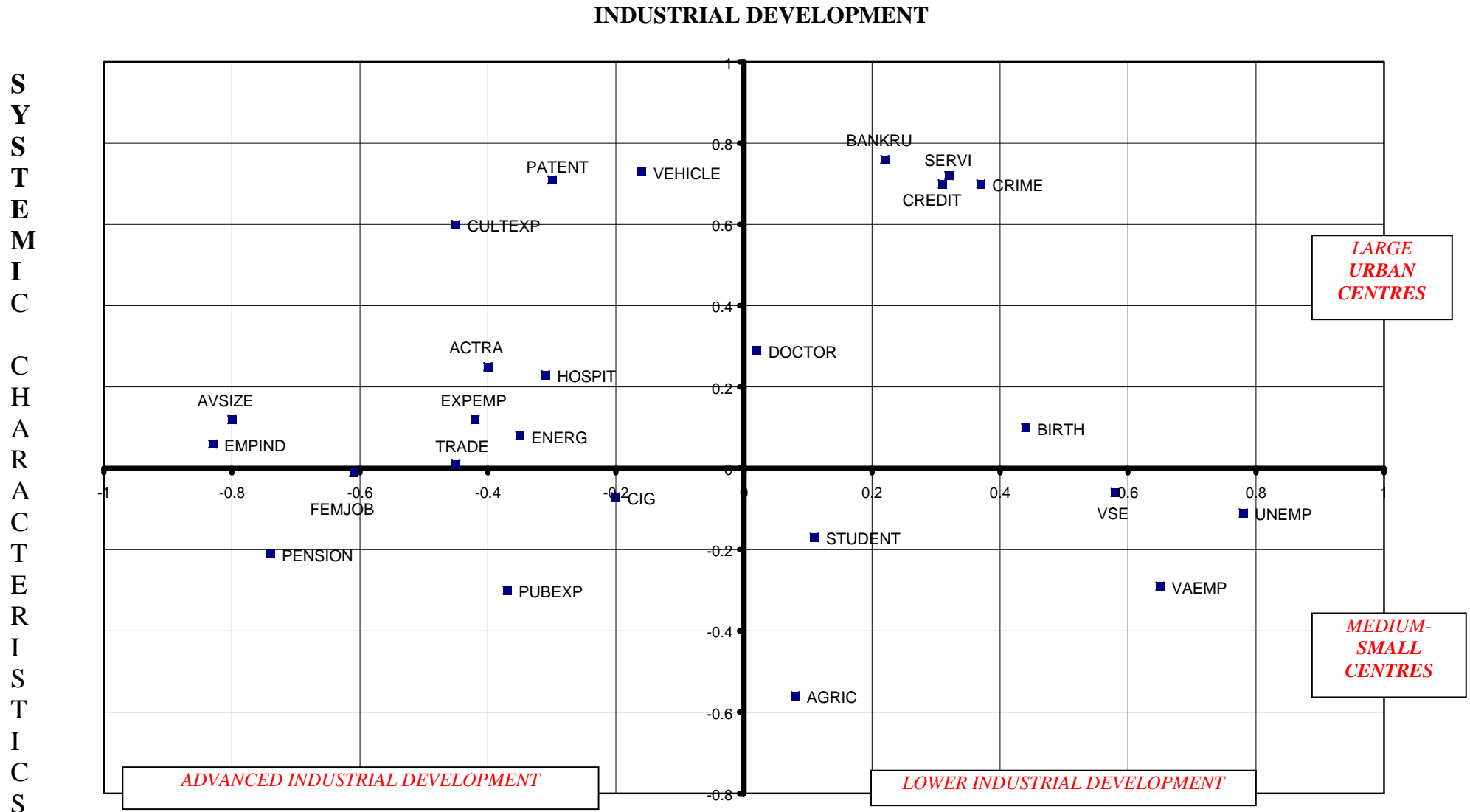


Figure 2 - PCA ANALYSIS 1998 - PROVINCES PLANE

INDUSTRIAL DEVELOPMENT

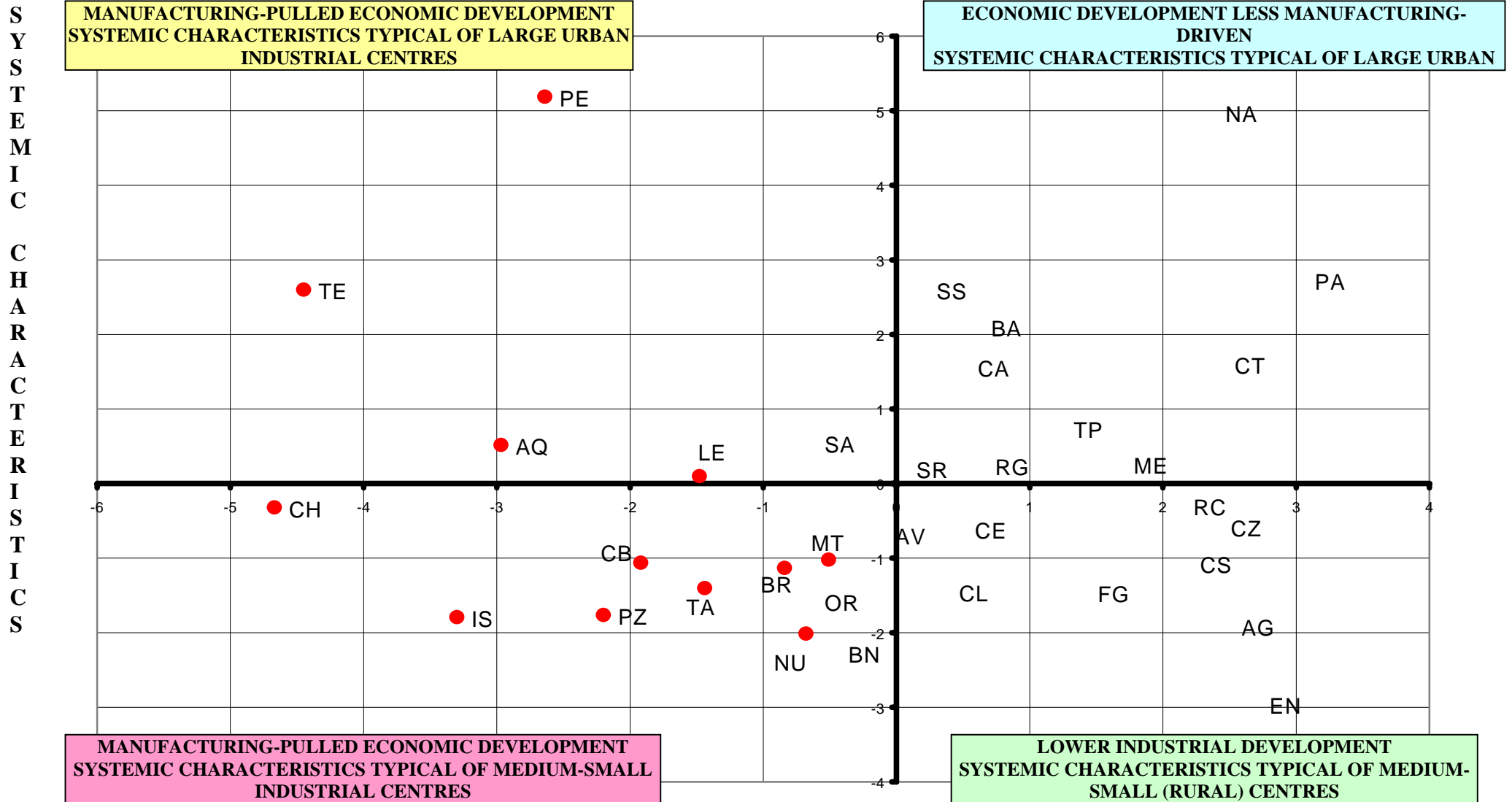


Figure 3 - PCA ANALYSIS “COMPROMISE PLANE” - VARIABLES

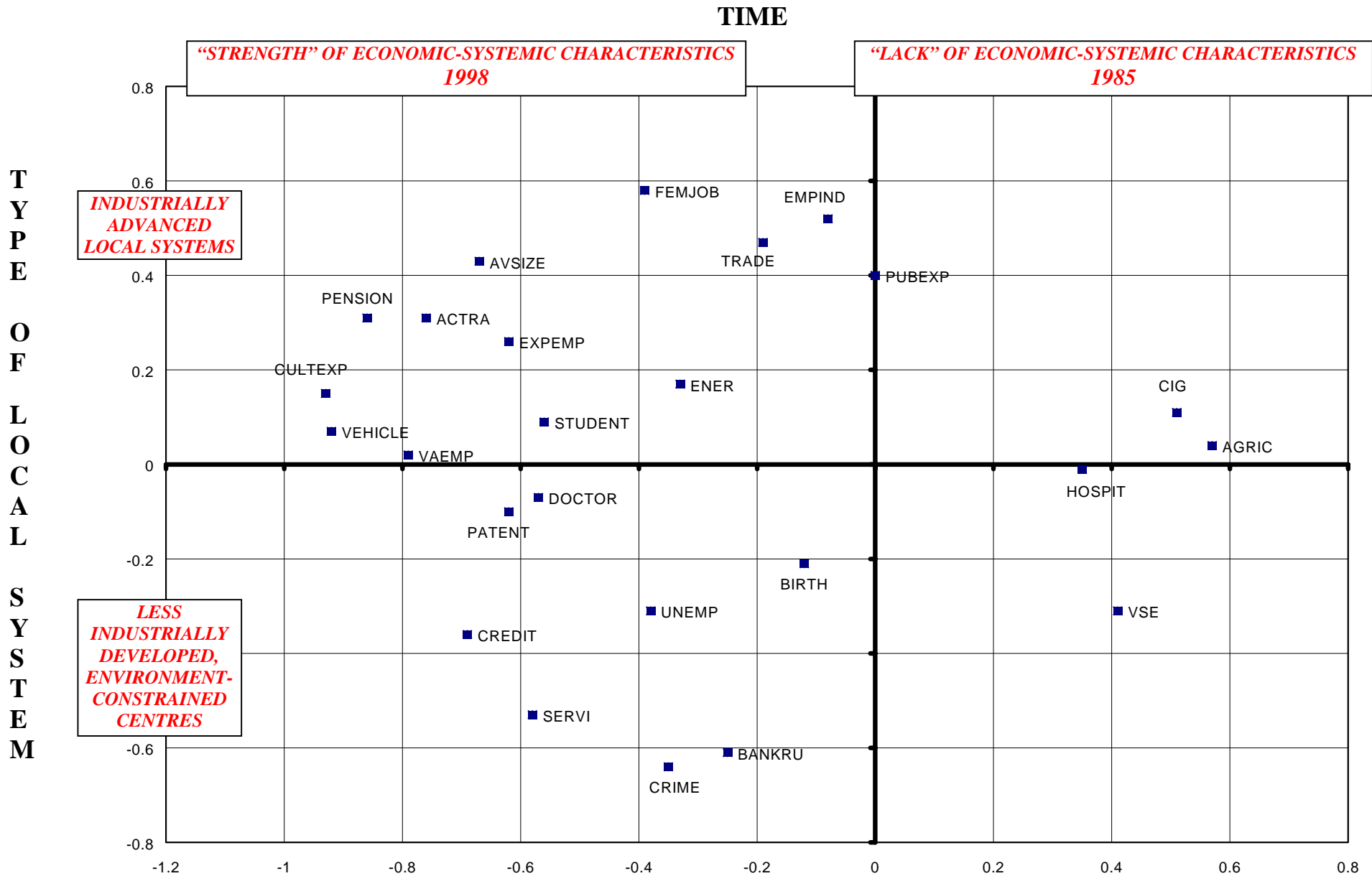
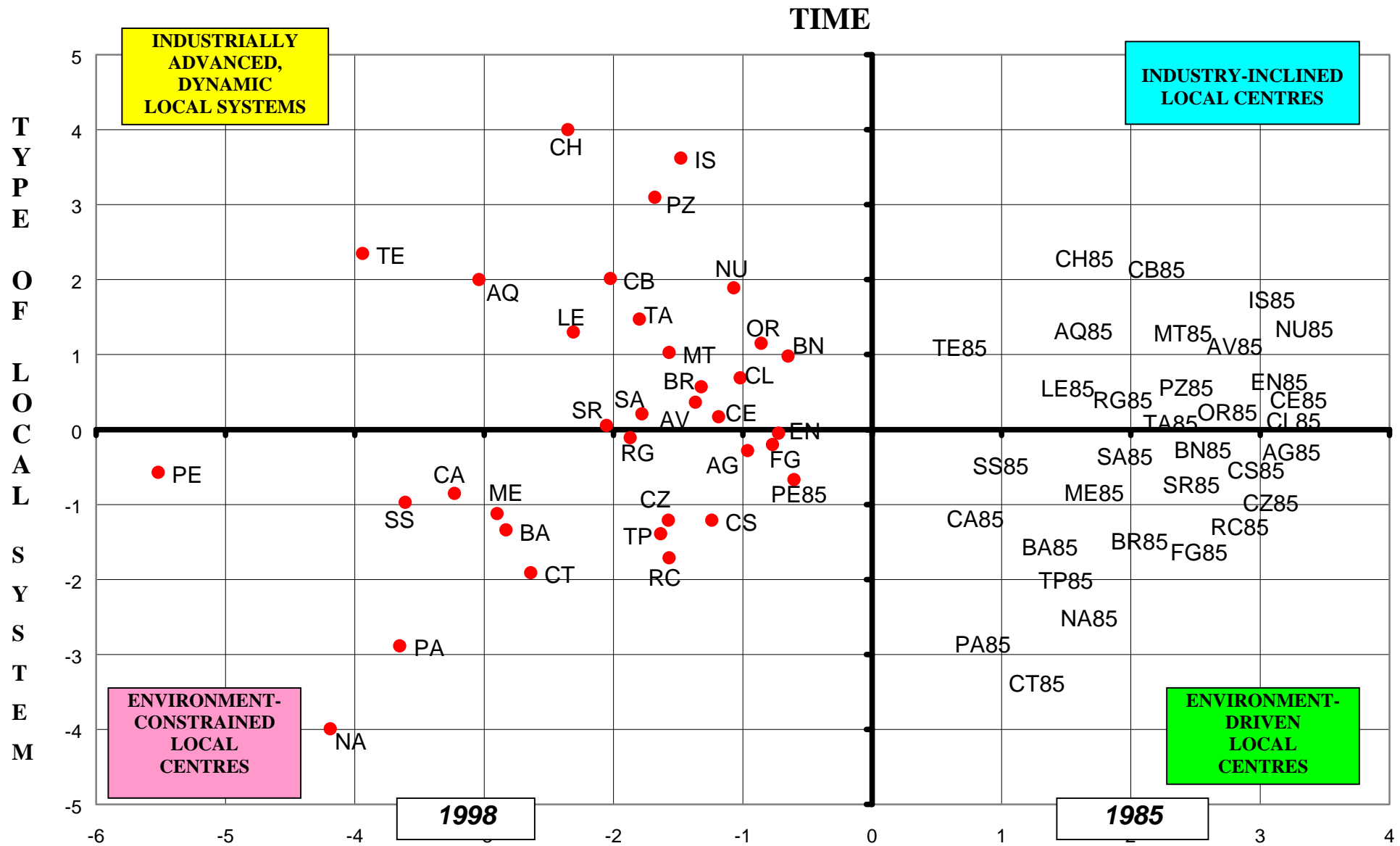
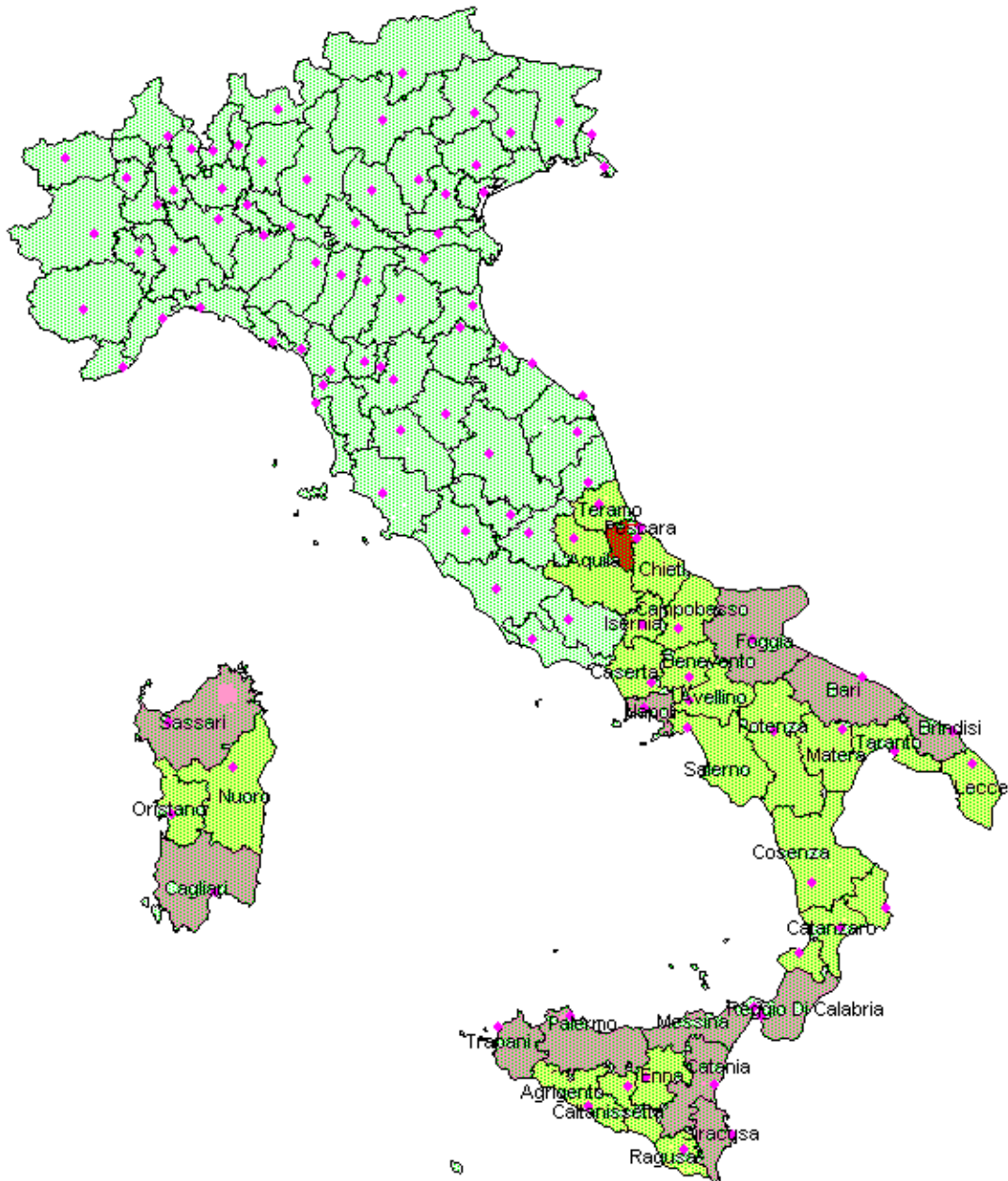


Figure 4 - PCA ANALYSIS "COMPROMISE PLANE" - PROVINCES



**Map 1 Italian Mezzogiorno - Provinces
1985 Cluster 1 ■ and Cluster 2 ■**



Map 2 Italian Mezzogiorno - Provinces

1998 Cluster 3 ■ Cluster 4 ■

Cluster 5 ■ Cluster 6 ■

