After the three Italies the (internally differentiated) North-South divide: analysing regional and industrial trajectories

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Abstract

The aim of this article is to examine the comparative economic performance of provincial, regional and macro-territorial entities in Italy and its relationship to their industrial composition and performance. In doing so, the evolution of the Third Italy and of its industrial districts is placed in its wider national context. In the first part of the paper a partitioning of provincial economic performance into regional, macro-territorial and North-South elements demonstrates the overwhelming continuing importance of Italy's North-South divide, while a finer analysis of regional evolutions identifies striking elements of persistence and change in the pattern of territorial inequality in Italy. In the second part of the paper further decompositions permit identification of the role of industrial composition as a driver of regional performance and the importance of examining not just systems of small and medium-sized enterprises organised in districts but also other parts of an interdependent spatial division of labour. The paper concludes by illustrating the ways in which the analysis of performance of the different parts of this interdependent division of labour can help lay the micro-foundations for analyses of regional economic performance.

Keywords
North-South divide, Three Italies, industrial districts, regional inequality, Theil coefficient, regional economic performance, industrial performance, territorial division of labour

1 Introduction

Ever since the publication of Bagnasco's Tre Italie (Bagnasco, 1977), Becattini's region-centred analyses of Italy's industrial districts (Becattini, 1979; Becattini, Bellandi, Dei Ottati and Sforzi, 2003) and Piore and Sabel's The Second Industrial Divide (Piore and Sabel, 1984), analyses of regional and industrial change in Italy have focused almost entirely on the district model, the dynamism and adaptability of the Made-in-Italy industries and the character and development of the Third Italy. These studies have many merits. Amongst them is the fact that they opened the way to finer analyses of the economic geography of contemporary Italy, and were associated with comparable developments in other areas, including urban geography, in which a mosaic of local systems and of flexible and diversified territorial evolutions were, for example, identified (Clementi, Dematteis and Palermo, 1996). The aim of this paper is nonetheless to argue that the attention paid to these phenomena is disproportionate and to offer an alternative approach to the
study of Italian regional economic development and, more generally, to region-centred research in economic geography (see also Dunford and Greco, 2006; 2007; Dunford, 2006). One reason for seeking an alternative approach is the fact that in the last ten years the performance of the Made in Italy sectors and indeed of the Italian economy as a whole has deteriorated sharply, posing a question-mark over earlier explanations of their strengths and its roots. Another and in fact more important reason is that region-centred approaches underplay the importance of the interdependence of regional economies and of different parts of a territorial division of labour. A striking consequence of this alternative approach is the way in which it draws attention to the relevance of considerations present in regional geographies of Italy which are much more systematic in their approach (Dauphiné, 1999; Rivière, 2004).

Although Italy is a single nation state and a national community, any examination of its internal social characteristics reveals that, beyond the abstractions embodied in the definition of nationhood, there are many Italies, with some internal differences sufficiently large to generate pressures for political fragmentation. An important driver of these internal differences is contrasts in economic performance.

Figure 1 Italy's territorial divisions and regions

An examination of contemporary territorial disparities as measured by regional Gross Domestic Product per inhabitant demonstrates however that the major contemporary territorial divide is not one that separates provincial or regional economies but the one that separates the South and the three territorial divisions that make up the Centre-North (Figure 1 identifies the four territorial divisions and their constituent regions), while an analysis of the economic structure of these territorial divisions indicates that they are all components of an interdependent, but
unequally developed, territorial system.

Similarly the Made in Italy industries and the small and medium-sized enterprise systems that developed from the 1960s onwards in parts of the Centre and North-East of Italy are important components of the Italian economic system. Similar types of industries and similar systems also developed, however, in Lombardia, Piemonte and to some extent in the South. More importantly, these industries are simply one of several interdependent worlds of production (see also Bagnasco and Oberti, 1998).

Alongside the world of small and medium-sized enterprise systems stand at least two other worlds of production and the individual industries that make them up. The first is the world of diversified producer and consumer service industries. This world includes traditional services with significant self-employment and a more dynamic set of information, communication, entertainment, advertising, leisure, health, education and financial services. The second is the world of large-scale industries. This world of production remains economically important in spite of the sharp declines in direct employment that accompanied its restructuring in the 1980s and 1990s: as fixed capital investment remains large, however, the profitability of these industries requires organizational stability and a predictable future, in contrast to the more adaptable small and medium-sized enterprise systems and service sectors.

Associated with these other worlds of production are territorial realities that differ significantly from Italy's industrial districts. Most significant are Italy's metropolitan areas that include its often neglected capital. Also included is the South. After years of falling behind, the South has recently seen some improvement in its relative performance. This improvement was not simply a result of the diffusion of the district model but also of the restructuring of earlier, and the creation of new, poles of development.

These considerations underpin the aims of this paper. The first is to place the evolution of the Third Italy in its wider national context. To this end, the trajectories of a set of interdependent regional economies that comprise different parts of a frequently global system are identified and explained. The second is to illustrate an approach to the analysis of the microfoundations of regional dynamics that differs significantly from district approaches and the new regionalism. This approach involves identifying and explaining the underlying trajectories of a set of interdependent industries and their associated territorial divisions of labour. These industries include not just those in which small and medium-sized enterprises and district modes of organization prevail but also industries that make up the other worlds of production identified in this section.

The point of departure for this alternative approach is an analysis of the comparative performance of all of Italy's regional economies (relative to the wider world of which they are a part). To this end Italy's regional disparities as well as trends in inequality and the relative trajectories of Italy's 20 regions will be examined in sections 2-4. Aggregate differences and trends in Gross Domestic Product (GDP) and its components are the sum of a series of sectoral
and of firm/plant contributions. A method of disaggregation designed to identify these industrial composition components will be outlined and illustrated in Section 5. The final step involves explaining areal differences in what is produced, in the functional roles that are performed and in the rewards people receive, remembering that these areal differences are a reflection of the performance of different yet interdependent roles in wider divisions of labour. As a step towards examining these issues, attention will be paid to value chain ideas which offer a way of establishing the micro-foundations of territorial divisions of labour. This approach to the establishment of the industrial composition and micro-foundations of regional change will be illustrated by brief considerations of the textiles and clothing and motor vehicles sectors. The final section will identify some conclusions.

2 Territorial inequality in Italy

An enduring characteristic of Italy is the existence of wide regional disparities in the creation of wealth and the distribution of income. Contemporary disparities in wealth creation are plotted in Figure 2. Each circle denotes estimates for the year 2000 of value added for each of 102 Italian provinces. The provincial estimates are grouped vertically by region (Figure 1) and expressed as a percentage of the EU15 average, while the regional averages are plotted as diamonds.

Figure 2 Territorial inequality in Italy in 2000. Source: elaborated from ISTAT (2003)

As Figure 2 shows, in 2000 Italy's leading province was Milan (159% of EU15 average). Next came Bolzano (147%), Modena (143%), Bologna (142%) and Parma (132%). At that date, Milan accounted for 10.2% of Italian value added or nearly one-half of the share of Lombardia as a whole (20.6%). Rome accounted for 7.9% of value added. Turin at 4.7%, Naples 3.4% and Brescia 2.3% were the next most important regional economies after Milan. At the other end of the spectrum lay a series of southern provinces in Calabria, Sicilia, Puglia and Campania with the lowest per capita value added figures for Crotone (54.2%), Agrigento (55.5%), Vibo Valentia (57.3%), Enna (58.0%) and Caltanissetta and Lecce (59.8%). Of these economies Lecce accounted for 0.8% of national value added. The others were in the range 0.2-0.4%.
The most striking characteristic of Figure 2 is however the sharp North-South contrast it reveals. Of the 46 provinces in the regions from Emilia Romagna northwards, just two lay (narrowly) beneath the EU15 average. By contrast, the highest score for the 36 provinces in the regions located entirely in the Mezzogiorno was 86.6% of the EU15 average for the coastal province of Pescara in Abruzzo, ranked 65th nationally. 28 of these southern provinces lay beneath 75% of the EU15 average. Included were the whole of Campania, Basilicata, Puglia and Calabria.

One way of measuring the contribution of inequality at different scales to overall geographical or social inequality is to compute and partition the Theil coefficient. The Theil index has its roots in the concept of entropy developed by Shannon (1948) in the field of information theory. Shannon’s aim was to measure the amount of information contained in a random event. His argument was that the information content of an event was an increasing function of the degree of uncertainty associated with its occurrence. The more unexpected an event, the greater its information content, and vice-versa: telling someone that a ball drawn from a box containing only red balls is red has, for example, zero information content as the outcome is certain. More specifically, Shannon suggested that the information content of an event is inversely proportional to the probability of its occurrence: if there are \( n \) events, of which one is certain to occur, if the probability of a each event is \( x_i \) and if \( \sum_{i=1}^{n} x_i = 1 \), the expected information content or entropy of an event is given by

\[
H(x) = \sum_{i=1}^{n} x_i \log \frac{1}{x_i}
\]

(1)

To adapt this index to the measurement of inequality, Theil replaced probabilities with income shares, identified a positive relationship between the degree of entropy and the degree of equality and arrived at a measure of the degree of inequality by subtracting the resultant measure of equality from its maximum value (which occurs when all individuals get the same income share or all groups get a share that is proportional to the size of the group as a share of the total population).

Suppose that \( p_i \) denotes the population of the \( i \)th region \((i = 1, 2, \ldots, n)\), and that \( q_i \) denotes its GDP. The Theil coefficient (TC) is given by the equation:

\[
TC = \sum_{i=1}^{n} \frac{q_i}{\sum_{i=1}^{n} q_i} \log_e \left( \frac{\sum_{i=1}^{n} \frac{q_i}{p_i q_i}}{\sum_{i=1}^{n} \frac{q_i}{p_i q_i}} \right)
\]

(2)

This index can be interpreted 'as the expected information content of the indirect message which transforms the population shares as prior probabilities into the income shares as posterior probabilities' Theil (1967:125-126), and as a measure of the gap between the share of the population that each individual or group accounts for and the share of income it receives.

An important property of the Theil index is its decomposability. Suppose that there are \( n \) regional entities (\( n \) provinces for example), which can be aggregated into \( m \) groups (20 regions...
for example) possibly of different sizes \(m_1, m_2, ..., m_m\), and that the \(m\) groups can be aggregated into \(l\) supergroups possibly also of different sizes (4 territorial divisions for example each comprising different numbers of regions). To facilitate the exposition start at the highest level of aggregation, and assume that the aggregate income and population figures can be disaggregated first into figures for \(l\) territorial groups. The Theil coefficient for the \(l\) territorial entities is

\[
T^L = \sum_{i=1}^{l} y_i^L \log \frac{y_i^L}{p_i^L}
\]

where \(y_i^L = Y_i^L / \sum_{i=1}^{l} Y_i^L\) is the \(i\)th territorial unit’s share of total income and \(p_i^L = P_i^L \sum_{i=1}^{l} P_i^L\) is the \(i\)th territorial unit’s share of total population, where the superscript \(L\) emphasises that the figures relate to the territorial entities. Theil’s coefficient measures the inequality between the territorial units (inter-territorial unit inequality).

If the data is disaggregated further, the Theil coefficient, computed for the finest of the levels of spatial disaggregation, can be completely and perfectly decomposed into an inter-group component and one or more intra-group components. Assume that the aggregate income and population figures for the territorial units can be disaggregated first into figures for the regional units of which the territorial groups are made up. The decomposition is

\[
T^M = T^L_{\text{inter}} + T^L_{\text{intra}} = T^L + \sum_{i=1}^{l} y_i^L T^M_i
\]

where \(y_i^M = Y_i^M / \sum_{i=1}^{l} Y_i^M\) is the share of the \(j\)th region in the income of the first of the \(l\) territorial units (indexed by \(i\)) of which it is a member (where membership is denoted by \(M\) and by the fact that its index \(j\) lies in the range \(1 \geq j \leq m_1\)).

If the \(m\) regional entities are in turn subdivided into \(n\) smaller provincial entities, the decomposition of the inequalities between the provincial units can be decomposed into

\[
T^N = T^L_{\text{inter}} + T^L_{\text{intra}} + T^M_{\text{intra}} = T^L + \sum_{i=1}^{l} y_i^L T^M_i + \sum_{j=1}^{m} y_i^M T_j^N
\]

The Theil coefficient is equal in other words to the sum of the inequalities between the first tier of territorial units, the inequalities within the territorial units and the inequalities within the second tier of regions, or is equal to the inequalities between the areas identified at the first level plus a weighted sum of the Theil coefficients at each subsequent level of the hierarchy of territorial units. The Theil index for each group is the inequality between the individuals who are members of the group, while the weights are each group’s share in the income of the next higher level.

A decomposition of the Theil coefficient for inequalities in value added per capita is presented...
in Table 1. As this table shows, in 2000 the North-South divide separating the Centre-North from the Mezzogiorno was by far the most important regional division in Italy. In that year the Theil coefficient (computed using natural logarithms and multiplied by 1000) stood at 32.8 for the North-South divide. 34.2 for the gap between the four territorial divisions (North-West, North-East, Centre and South), 36.2 for the 20 regions and 41.9 for the 103 provinces.

What Table 1 provides is a decomposition of the differences in per capita GDP between Italy's 102 provinces into differences between the Centre-North and the South, differences within the North-South, differences within the territorial divisions (regional differences), and differences within the regions (provincial differences within the regions). 78.3% of the differences between provinces are due to North-South differences. Just 3.2% are due to differences within the four underlying territorial divisions. Of the differences within the territorial divisions (areas) the largest contributions in 1980 were made by differences in the North-West (1.9%) and South (1.7%). Another 13.7% of the interprovincial differences were due to differences within the 20 regions. The regions with the largest internal differences were metropolitan Lombardia (7.0%), containing Milan, and Lazio, containing Rome, (2.7%). In Italy, therefore, the most fundamental aspect of territorial inequality was the gap between the Centre-North and the South, although non-trivial contributions were made by inequalities within the North-west and South and within Lombardia and Lazio. Clearly, Italy's territorial inequalities are first and foremost a macro-territorial phenomenon with in particular of profound continuing North-South divide whose importance was to some extent forgotten in discussions of the Third Italy.
Table 1 Decomposition of the Theil coefficient, 1995-2000 Source: elaborated from data in ISTAT (2002)

<table>
<thead>
<tr>
<th>Source</th>
<th>Theil index × 1000</th>
<th>Share of total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between North-South</td>
<td>35.4</td>
<td>35.6</td>
</tr>
<tr>
<td>Within North-South</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Between Areas</td>
<td>36.9</td>
<td>37.2</td>
</tr>
<tr>
<td>Within Areas</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Between Regions</td>
<td>39.4</td>
<td>39.8</td>
</tr>
<tr>
<td>Within Regions</td>
<td>5.0</td>
<td>4.7</td>
</tr>
<tr>
<td>Between Provinces</td>
<td>44.5</td>
<td>44.5</td>
</tr>
<tr>
<td>Within North-South Centre-North</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>South</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Areas</td>
<td>2.5</td>
<td>2.6</td>
</tr>
<tr>
<td>North-West</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>North-East</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>Centre</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>South</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Within Regions</td>
<td>5.0</td>
<td>4.7</td>
</tr>
<tr>
<td>Piemonte</td>
<td>0.4</td>
<td>0.2</td>
</tr>
<tr>
<td>Valle D'Aosta</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Lombardia</td>
<td>2.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Liguria</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Trentino-Alto Adige</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Veneto</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Friuli-Venezia Giulia</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Emilia-Romagna</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Toscana</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Umbria</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Marche</td>
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<td>0.0</td>
</tr>
<tr>
<td>Lazio</td>
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<td>0.8</td>
</tr>
<tr>
<td>Abruzzo</td>
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<td>0.0</td>
</tr>
<tr>
<td>Molise</td>
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<td>0.0</td>
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<td>Campania</td>
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</tr>
<tr>
<td>Puglia</td>
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<td>0.1</td>
</tr>
<tr>
<td>Basilicata</td>
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<tr>
<td>Calabria</td>
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<td>0.1</td>
</tr>
<tr>
<td>Sicilia</td>
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<td>0.2</td>
</tr>
<tr>
<td>Sardegna</td>
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</table>
3 Trends in Italian regional development

The current map of regional inequality is a result of a set of long-term development tendencies. Figure 3 plots the degree of inequality in GDP per head between 19 regions (as Abruzzo and Molise are treated as a single region). Two indicators are employed: the Theil coefficient and the Weighted Mean Absolute Deviation (WMAD).¹

Figure 3 Trends in Italian regional inequality: disparities in regional GDP per resident, 1951-2000 Source: elaborated from Istituto Tagliacarne and ISTAT data and ISTAT (1998; 2003)

As Figure 3 shows, the years associated with the rise of the Third Italy were years of widening regional disparities. After a sharp decline in 1951-53, territorial inequalities increased in the 1950s, in spite of an agrarian reform, the establishment of the Cassa per il Mezzogiorno, and the net exodus, in 1952-61, of 1.8 million people from the South. In 1960, the degree of inequality was close to its 1951 level. In 1960-75 the situation changed dramatically. For 15 years there was strong catch-up as the less developed parts of Italy closed the gap on the more developed. The Theil coefficient fell by almost 48% from 57.3 in 1960 to 29.8 in 1975, while the WMAD declined by 26.4% from 28.4 to 20.9 (Figure 3). After 1975 there was a reversal in the trend. Overall there was a clear increase in inequality, with the Theil coefficient reaching 37.8 and WMAD 24.6 in 1996. A not insignificant part of the relative improvement that had occurred after 1960 was reversed in 1975 and after 1983. In the last few years, conversely, there was a

¹ If \( p_i \) denotes the population of the \( i \)th region \((i = 1, 2, ..., n)\), and \( y_i \) denotes its per capita GDP, the weighted absolute deviation (WAD) is given by the equation

\[
WAD = \frac{1}{\sum_{i=1}^{n} p_i} \sum_{i=1}^{n} \left| y_i - \bar{y} \right| \frac{p_i}{\sum_{i=1}^{n} p_i}
\]

To facilitate comparisons the weighted absolute deviations are expressed as percentages of the mean to give a coefficient of variation (CV).
renewed phase of convergence, admittedly in an era in which the Italian economy performed poorly, with the Theil coefficient declining to 34.2 in 2000.

Variations in GDP per head can be partitioned into (apparent) productivity and employment rate elements (Dunford, 1996). To examine the role of these two elements, Figures 4 and 5 plot the variation in productivity and employment rates, drawing on ISTAT data relating to the number of full time equivalent jobs. As these data are only available from 1970, the graphs relate only to the end of the phase of convergence, the subsequent long phase of regional divergence and the very recent renewal of catch-up. The results are particularly striking.

Figure 4 Territorial disparities in (apparent) productivity: disparities in regional GDP per full-time equivalent worker, 1970-2000. Source: elaborated from ISTAT (1998; 2003)

Figure 5 Territorial disparities in employment rates, 1970-2000. Source: elaborated from ISTAT (1998; 2003)

In the first few years of the 1970s there was a rapid decline in productivity differentials. In 1976 productivity differences increased sharply. In 1976-86 there was once again a clear downward
trend in differentials with some cyclical movements. In 1990 the degree of inequality descended beneath the level recorded in 1975, while in 1995-99 it declined quite rapidly.

The evolution of employment rate variations differed markedly from the evolution of productivity differentials. After a decline until 1972, employment rate differentials rose sharply, from a Theil coefficient of 8.6 in 1972 to 13.1 in 1981. In 1981-88 and 1988-96 there were cyclical movements, with initial reductions in employment rate inequality followed by even stronger increases, and with the Theil coefficient reaching 18.6 in 1996. A renewed downturn started in 1996-2000.

Clearly, it is not productivity differentials that account for the recent overall increase in Italian regional inequality, as productivity differentials have tended to diminish, though productivity differentials remain a significant determinant of differences in the levels of regional development in contemporary Italy. At the root of the inequality increases up to 1996 were very sharp increases in employment rate variations. Similarly, the recent decline in disparities reflects the recent fall in employment rate differentials, although productivity convergence accelerated. A critical determinant of convergence and divergence tendencies seems, therefore, to be the extent to which the regional demand for labour is sufficient to absorb those seeking employment, as productivity increases. Growth in the demand for labour depends on the speed of accumulation and growth. Essentially, the speed of economic growth and of growth in the demand for labour relative to the increase in the supply of labour were, until recently, weakest in the least developed parts of Italy. As suggested earlier, however, the recent relative improvement in the position of the South is in part a consequence of a relative decline in northern growth rates (along with important socially-useful job creation schemes in the South).

4 Italian regional evolutions

Aggregate indicators of disparities in regional development conceal important details relating to the trajectories of individual regional economies. To identify these individual trajectories Figure 6 plots the position of each regional economy relative to the EU15 average at a series of points in time (1951 1960, 1975, 1996 and 2000).

Several features of this diagram warrant attention. The first is that the distribution of regional economies was less dispersed in 2000 than in 1951, largely as a result of the rise in the relative scores of the weakest regional economies, and the sharp relative decline of the Valle d'Aosta. The second characteristic of the chart is the evidence of (1) the relative improvement in the position of southern regions and the strong convergence in the years from 1960 until 1975, and (2) the weakening of the position of Italy's regional economies relative to the rest of the EU15 in the late 1990s. A third striking feature of the chart is the strong degree of inertia and the strong degree of persistence of regional disparities that it reveals. The top regional economies in 1951 remained for the most part at the top end of the distribution in 2000, just as the regional economies at the bottom end tended to remain there.
Figure 6 Growth of Italy's regional economies relative to the EU15 average, 1951-2000. Source: elaborated from Istituto Tagliacarne and ISTAT data (see Dunford and Greco, 2006) and ISTAT (1998; 2003)

The chart also records the changing rank order of regional economies. While these ranks do indicate a certain degree of inertia at the extremes, there is also evidence of some striking changes in relative position. The relative rise of a number of regional economies in the Third Italy is clear, with some striking ascents. Trentino-Alto Adige moved from 4th to 2nd, the Veneto from 11th to 5th and Emilia-Romagna from 7th to 4th. In the South, Abruzzo and Molise move from 16th to 13th and Basilicata from 17th to 15th. It is important to note, however, that a number of these regions are demographically small. In addition, it is clear that there are striking contrasts in the timing and degree of relative growth of areas comprising the Third Italy to which the existing literature has paid little attention.

As is clear from Figure 6, there is a wide range of individual regional trajectories. In the Northwest there is a certain degree of parallelism in the development paths of the metropolitan economies centred on Milan and Turin, with the former remaining ahead of the latter, and gaining some ground. The southern economies are quite differentiated: all started and ended as the least developed, although catch-up in the Golden Age meant that the size of the gaps diminished, while a few saw their relative fortunes improve in the late 1990s. These trajectories differ significantly from those of the Third Italy, within which there were very significant intra-area variations.

These regional evolutions are a result of the interaction of a set of centrifugal and centripetal
tendencies. Centrifugal mechanisms, which include the relocation of factor-cost sensitive activities in low cost peripheral areas and technological catch-up, contribute to an equalisation of the conditions of production and exchange and of levels of development. Conversely, centripetal mechanisms, which include scale economies, cumulative increases in knowledge and skills in core areas, some effects of infrastructural improvements and of flows of investment and people, and increased market size, help create new differences and increasing inequalities. If the former outweigh the latter, inequalities get smaller and vice-versa.

5 Industrial change and regional development

Aggregate differences and trends in GDP and its components are the sum of a series of sectoral and of firm/plant contributions. Output per head can be expressed, for example, by the following equation:

\[
\frac{\text{GDP}}{\text{POP}} = \sum_{i=1}^{n} \left( \frac{\text{GDP}_i}{\text{EMP}_i} \right) \left( \frac{\text{EMP}_i}{\text{POP}} \right)
\]

where GDP denotes Gross Domestic Product, EMP denotes employment, POP denotes population and where \( i \) denotes the sectors \( (i = 1, 2, \ldots, n) \). As is clear from this equation, regional GDP per head is a weighted sum of regional sectoral productivities which themselves reflect an underlying territorial division of labour. Insofar as individual sectors/firms/establishments reveal similar modes of spatial organisation, one can identify regional models/paths, of which districts, vehicle assembly parks, industrial estates, cathedrals in the desert and their trajectories are examples. Although important, the aim of the approach outlined in this paper is not to identify these models. Instead, it is to identify and explain the contributions of different sectors/firms to regional structure and performance.

As a first step in identifying the significance of industrial composition, Figures 7 identifies the structure of four illustrative regional economies. The figure records cumulative full-time equivalent employment on the vertical axis, and sectoral productivity on the horizontal axis. As a result, the area of each segment is proportional to aggregate value added. As is immediately clear, Lombardia is much larger in economic terms than Piemonte and than Basilicata and Puglia, which were grouped owing to the small size of Basilicata. Manufacturing industries are much more weakly developed in the South than in the two northern areas. In all of these economies, moreover, manufacturing and, in particular, the sectors we shall consider (vehicles and textiles and clothing) account for a relatively small share of output. Also striking is the fact that productivity is roughly comparable in the two sectors in the two northern areas. In machinery and equipment the figures for the South are somewhat smaller (95-96%), while in textiles and textile products southern productivity stands at just 53-54% of the northern figure.
These differences in the sectoral productivities and sectoral profiles (with different degrees of representation of high and low-productivity sectors) of different regional economies help explain the overall differences in economic performance examined in earlier sections. To identify the impact on regional productivity convergence (which itself has a measurable impact on regional convergence) of intra-sectoral productivity differentials on the one hand, and variations in degree of representation of high and low-productivity sectors on the other Dunford (2003) and Dunford and Greco (2006) employ a number of decompositions of relative regional productivity. Essentially a relative increase in productivity in a sector contributes to overall productivity catch-up provided either that it is not offset by a decline in the sector's employment share, or that the resources released are re-employed in sectors with higher relative productivity (than prevailed initially in the sector under consideration). The reason why is that regional productivity is equal to the sum of productivity in each industry weighted by the industry's share of total employment.
Table 2 A decomposition of regional productivity by industry, 1980-95 and 1995-00 Source: elaborated from ISTAT (1998; 2003b)

<table>
<thead>
<tr>
<th>Region</th>
<th>Textiles, clothing, leather, leather products</th>
<th>Textiles and textile products</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RPG8095</td>
<td>EM80</td>
</tr>
<tr>
<td>Piemonte</td>
<td>0.03</td>
<td>0.06</td>
</tr>
<tr>
<td>Lombardia</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>Veneto</td>
<td>0.11</td>
<td>0.10</td>
</tr>
<tr>
<td>Emilia Romagna</td>
<td>0.05</td>
<td>0.05</td>
</tr>
<tr>
<td>Toscana</td>
<td>-0.01</td>
<td>0.14</td>
</tr>
<tr>
<td>Marche</td>
<td>0.09</td>
<td>0.14</td>
</tr>
<tr>
<td>Abruzzo</td>
<td>0.06</td>
<td>0.06</td>
</tr>
<tr>
<td>Campania</td>
<td>-0.00</td>
<td>0.04</td>
</tr>
<tr>
<td>Puglia</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Basilicata</td>
<td>0.02</td>
<td>0.02</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Transport equipment</th>
<th>Machinery and mechanical, electrical and optical equipment; transport equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RPG8095</td>
<td>EM80</td>
</tr>
<tr>
<td>Piemonte</td>
<td>-0.01</td>
<td>0.08</td>
</tr>
<tr>
<td>Lombardia</td>
<td>-0.01</td>
<td>0.02</td>
</tr>
<tr>
<td>Veneto</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Emilia Romagna</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Toscana</td>
<td>-0.00</td>
<td>0.01</td>
</tr>
<tr>
<td>Marche</td>
<td>0.04</td>
<td>0.01</td>
</tr>
<tr>
<td>Abruzzo</td>
<td>0.02</td>
<td>0.02</td>
</tr>
<tr>
<td>Campania</td>
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<td>0.01</td>
</tr>
<tr>
<td>Puglia</td>
<td>0.18</td>
<td>0.01</td>
</tr>
<tr>
<td>Basilicata</td>
<td>1.07</td>
<td>1.00</td>
</tr>
</tbody>
</table>

These disaggregations or relative regional productivity change permit measurement of these impacts of productivity and employment changes. To give an example, the development in 1985-1995 of the transport equipment sector (essentially of the Melfi complex) accounted for nearly 18% of the increase of 1.02 in Basilicata's productivity relative to the Italian average (see Table 2). This improvement was a result of an increase in relative productivity in the transport equipment sector from 84 to 182% of the Italian average and a tripling of the sector's regional employment share. To give just one more example, consider the textiles and textiles products sector in 1995-2000. In Lombardia and Piemonte relative productivity declined. In the case of Piemonte the decline was pronounced, while in Lombardia it went hand in hand with a decline.
in the sector's share of regional employment. Together these movements had negative impacts (-0.09 and -0.05) respectively on the relative growth of these two regional economies.

These disaggregations also permit the construction of counterfactuals. Suppose, for example, that one asks what would have happened to Basilicata's relative productivity, if there had not been a significant transfer of vehicle manufacturing to the region, either because the new investments made in Basilicata were located abroad or in another part of Italy. In 1980-95 employment in transport equipment increased from 1,300 to 4,900, while productivity increased from 84 to 182% of the national average. If the productivity of the Basilicata transport equipment sector had remained at 84% of the national average, and if employment had changed at the national rate, declining to 831 full time equivalent jobs, the average productivity of Basilicata would have increased at 0.91 times the national rate rather than 1.02 times. The arrival of the car complex in Melfi added nearly 11 percentage points to Basilicata's relative productivity growth, transforming what would have been a further falling behind in terms of productivity into an actual catch-up.

6 The micro-foundations of regional performance and the territorial division of labour

The results of these disaggregations of aggregate data raise important questions as to why certain industries performed in particular ways in particular places. Answering these questions involves embarking on an analysis of the micro-foundations of regional dynamics and regional interdependence. Aggregate trends, sectoral evolutions and overall centripetal and centrifugal movements are in fact a result of the interaction and adding-up of millions of micro-economic developments of varying size and impact, that reshape an underlying social and territorial division of labour, defined as who does what, where and when, what rewards they receive and in what relationships they stand to other people and economic activities in other places. Examining and explaining the social and territorial division of labour ultimately requires an analysis of the structure and trajectories of individual establishments and enterprises in particular industries and of their changing roles in wider divisions of labour, on the one hand, and the identification and explanation of the micro-economic strategies from which they derived, on the other.
A conceptual framework that seeks to identify the connections between comparative regional development, the underlying territorial divisions of labour and the mechanisms that shape them is summarised in Figure 8. In this figure successive movements downwards identify factors that underlie or explain elements at each higher level. Conversely, movements upwards permit movements from micro-level activities to meso- and macro-level phenomena. Conceptually, the figure synthesises literature dealing with (1) corporate strategies and commodity and value chains (see Smith et al., 2002), (2) production networks, customer-supplier and employer-employee relations and relations to competitors and rivals and (3) and the regulation and governance of economic change. These three elements are represented by the three main boxes in the lower part of the figure, which are themselves derived from the distinction between the internal resources and strategy of an individual enterprise (whose limits change as a result of mergers, acquisitions and alliances) and the external environment of the firm (the external resources and constraints embodied in the relation of the firm with other firms and with non-corporate governance systems). As for the enterprise itself, its actions and the reshaping of its territorial division of labour are shaped by a profit strategy conceived in value chain terms as a combination of four types of action: cost reduction through the introduction of new productivity-increasing technologies, new methods for handling material and information flows or the reorganisation of operational structures (1A) or through the transfer of certain operations to areas where wage costs are lower, or the searching out of cheaper sources of energy, materials and components (1B); the development of commercially relevant products (2A) and
entry into new markets (2B); changes in the relative weight of different functional roles within the value added chain to increase the share of functions commanding higher returns (3); and disinvestment in one sphere of activity and a transfer of resources to new lines of activity and from one chain to another (4). At a regional scale the consequent processes of reorganization and relocation of economic activities are leading to radical shifts in the types of enterprise and areas of activity found in different places. As a result regional occupational and employment structures, skill mixes and wage profiles change, reshaping the map of relative regional economic development.

7 Territorial and regional development: (1) textiles and clothing industries

To illustrate the ways in which this framework can be employed, in this section and the next brief accounts of the evolution of two industries will be presented. The first is an industry associated with a significant presence of small and medium-sized enterprises and district modes of organisation (textiles and clothing). The second is a part of the world of large-scale industries (motor vehicles).

Figure 9 TCI employment change by province, 1971-2001 Source: elaborated from data from ISTAT (2004)

As Table 2 shows, in 2000 the textile and clothing industries accounted for 5-6% of jobs in Toscana, Veneto and Abruzzo, 4% in Piemonte and Lombardia and 2-3% in Puglia, Campania and Basilicata. Overall employment was in decline, although it was far more resistant to decline.
than in other developed EU Member States, while real textile sector value added increased until
2001, and clothing sector output peaked in the mid-1990s and remained relatively stable until
the end of the millennium. (More recently, the situation has changed sharply: the stagnation of
the domestic and some export markets combined with increased competition at home and
abroad as a result of the the entry of China into the World Trade Organisation in 2001 and the
removal of quotas in January 2005 saw sharp declines in employment, output and the number of
enterprises). A second important feature of Table 2 is the way it reveals a clear regional
hierarchy in productivity rates: in 2000 relative productivity stood at 1.14, 1.10 and 1.09 in
Piemonte, Lombardia and Toscana, 1.03 and 1.02 in the Veneto and Emilia Romagna and just
0.57-0.77 in Basilicata, Puglia, Campania, Abruzzo and Marche, with the lowest scores in the
south-east.

Figure 10 Changes in employment and the number of enterprises, 1971-81 Source : elaborated
from data from ISTAT (2004)

This pattern of employment and productivity is a result of the structure and trajectories of the
textile and clothing sector and the nature of the resulting interdependent territorial division of
labour. At the centre of the national system stood the fashion capital of Milan in Lombardia
with its sophisticated design, marketing and distribution system. Next came a series of districts/
district groups in the Centre-North including Biella (wool), Como (silk), Castelgoffredo
(womens' stockings), Vicenza (wool), Palazzolo sull'Oglio (cotton, buttons and button-making
machines), Treviso (knitwear and the Benetton system), Carpi (knitwear), Prato (wool), Empoli
and Florence (leatherwear). At the lower end lay a series of districts mainly along the Adriatic
coast and in the South mostly involved in subcontract work.

These areas developed in different ways, at different speeds and at different times. Figure 9
records changes in textile and clothing industry employment by province across three decades. In this figure the circles represent absolute increases in provincial employment and the squares absolute decreases. The first map and Figure 10 which plots the change in 1971-81 in the number of enterprises and in employment by province reveal clearly two developments. The first is the rationalisation of large plants and the job losses that occurred in the provinces of Turin (Piemonte) and Milan (Lombardia) in the 1970s. The second is the growth of employment often in micro-enterprises in non-metropolitan provinces in Lombardia as well as in the Veneto, Toscana, Emilia Romagna, Marche, Abruzzo, Campania and parts of Puglia. In the case of this second set of areas growth in the number of enterprises far outstripped increases in employment and sometimes accompanied decreases in employment. In 1981-1991 (Figure 9B) a strikingly different pattern prevailed. Job losses in Piemonte, Lombardia, Emilia Romagna, Toscana, Lazio and Campania coincided with increases in Mantua, the Veneto, with the exception of Vicenza, Abruzzo and the southern tip of Puglia, reflecting the differential fortunes of northern districts and the delocalisation of low-productivity employment to the South. In 1991-2001 (Figure 9C) employment decline was ubiquitous, in part as the international relocation of work and employment accelerated, creating an interdependent international as opposed to national division of labour. Most affected were core areas in Lombardia (-66,713 jobs) and the Veneto (-41,107).

At the root of these trends were processes of productive decentralisation of work from large enterprises to small and medium-sized and micro-enterprises. At a point in time when manufacturers in other developed EU Member States restructured and moved offshore, Italian manufacturers relied on internal peripheries. Amongst the reasons why were a series of environmental conditions (Figure 8). The first was the special status, protection and special advantages of artisans and small and medium-sized enterprises along with the political influence of the associations that represent their interests. (The disadvantage was that small enterprises have more difficulties than large ones in internationalising their productive activities, establishing more direct links with overseas product markets and investing in distribution and after sales service to secure a greater degree of control over distribution channels). A second factor that permitted the endurance of this model was the regular depreciation of the Italian Lira that helped make Italian small and medium-sized enterprises and craft enterprises, that undertook little research, competitive on export markets. A third was a capacity to protect margins domestically due to the relative importance of independent retailers and the survival until recently of a producer-driven chain. In the case of the textile and clothing sector another factor was tariff protection, the quota protection afforded Multi Fibre Arrangement and the phased quota reductions under the Agreement on Textiles and Clothing (at which point Italian manufacturers started to take advantage of Outward Processing Traffic and the post-1995 establishment of geopolitically-motivated preferential regional trade agreements).

In the case of the non-metropolitan parts of the Centre-North a number of relatively autonomous systems developed. In the cases of the Adriatic Coast and the South what prevailed
was the delocalisation of some of the most labour intensive phases of clothing production. A large share of southern clothing activity accordingly involves directly or indirectly subcontract work for external buyers that can be either large distribution chains, famous fashion designers or large northern firms, although a part of a firms’ output is sometimes also sold in street markets or in small supermarkets. Costs were contained in a variety of ways that include tax avoidance and the employment of very high shares of clandestine/undeclared labour (which includes family members, undeclared nationals and illegal immigrants). At the end of the 1990s FILTA-CISL estimates put the clandestine workforce at 30-90% of the southern total depending on the district (cited in Aniello, 2001:520-1). The sheer scale of clandestine activities suggests that the remarkably low officially recorded rates of productivity are perhaps over-estimates of the real rate of productivity.

As this brief account makes clear the regional productivity and employment impacts of the textile and clothing sector are a reflection of a set of industrial evolutions. These industrial changes are in part a consequence of a set of general environmental conditions. A more detailed and more nuanced account would require more specific attention to the profit-seeking strategies of individual enterprises (whether they involve delocalisation or offshoring of cost-sensitive parts of the production system, specialisation in knowledge-intensive design activities in distribution, marketing and sales, or other paths identified in Figure 8).

7 Territorial and regional development: (1) motor vehicles and parts industries

Evidence on the performance of the transport equipment sector is less easy to find in part due to its inclusion after 1995 in a group that includes an number of other equipment goods industries. In the years from 1980-95 when a transport equipment sector was separately identifiable in regional accounts data, striking relative productivity growth occurred in Basilicata (0.18) and to a lesser extent in Abruzzo (0.04). Conversely negative values were recorded in the former heartlands of which the most important was Piemonte. At a national level employment declined from 305,221 in 1971 to 174,391 in 2001 (ISTAT, 2004a; ISTAT, 2004b). Of these jobs 86,810 were in the province of Turin, 7,438 in Brescia (Lombardia), 6,851 in Potenza (Basilicata), 6,212 in Chieti (Abruzzo) and 5,824 in Bologna (Emilia Romagna). The presence of two southern provinces was a reflection of a significant reconfiguration of the geography of employment. As Figure 11 shows, in the 1970s there were strong employment declines in Turin and Milan and strong growth particularly in Naples, with the initial development of the Alfa-Sud complex. In the 1980s car sector jobs in Naples and Turin declined sharply, while expansion occurred in Modena (Emilia Romagna) and Chieti. In the 1990s an even sharper decline in relatively well-paid manual jobs occurred in Turin, with growth most notably in Potenza. As indicated in Section 4, the creation of the Melfi complex in the province of Potenza made a significant contribution to the relative improvement in the position of Basilicata in the 1990s notwithstanding the fact that car sector wages were comparatively low by national
standards.

Figure 11 Motor vehicle manufacture (ISIC Revision 3.1: 34): employment (2001) and employment change (1981-2001) by province Source: elaborated from ISTAT (2004b; 2004c)

The decline in well-paid manual jobs in the North-west and the development of manufacturing operations in the South were accompanied by the emergence of a new hierarchical international division of labour in this sector. These geographical trends were themselves a result of different aspects of the profit strategies put in place mainly by FIAT Auto (and that on several occasions met with little success). Of particular importance in relation to the investments in the South were attempts to put in place, with the help of state aids, new organisational and technological principles, starting with the 'lights-out' plant at Cassino, and finishing with the integrated factory at Melfi. The fortunes of these Italian investments were profoundly influenced by several other strategic actions. The first was an oscillating commitment to diversification including a movement into services (method 4 in Figure 8) and movements along the chain towards higher value-added functions and activities closer to the final consumer (method 3). The second was the consequent lack of investment in research and development and in new model development (method 2A) that put FIAT Auto at a greater disadvantage vis-à-vis its rivals in saturated advanced country markets. The third was the relative failure of a globalization strategy involving the entry into emerging economies (method 2A): the results of these market entry strategies fell far short of expectations, contributing to a deteriorating financial position at the start of the new millennium. The fourth was the associated platform
convergence, component standardization and global sourcing strategies (and related joint
development strategies) designed to drive down costs (method 1B) which have the potential to
reconfigure the geography of sourcing and product development (Dunford and Greco, 2006).

8 Conclusions

In this paper I have argued that studies in economic geography endeavour to connect micro-
evolutions with wider meso- and macro-economic trends in development and that studies of
particular regional economies or sectors of economic life should recognise that these entities are
parts of wider systems of interdependence.

Emphasis was placed in the first sections on the importance of seeking to measure the
performance of regional economies relative to each other. The results of such analysis in the
Italian case significantly qualify many of the generalisations that emerged from region-centred
studies. Amongst other results this research highlighted the continuing importance of the North-
South divide, the diversity of individual regional trajectories and oscillations in the performance
of Italian regions relative to the rest of the EU15.

Connecting micro-evolutions with these wider trends in regional performance is also important
as it makes it possible to place the former in context and to reveal the variety that the latter
conceals. Although this task is a difficult one, progress can be made by asking what part the
evolution of an industry plays in creating the aggregate wealth of a locality. To this end
attention was paid to sectoral disaggregations of aggregate data, to examine what was
happening to individual industries, and to measure the impact of their growth/decline on
aggregate trends. Aggregate sectoral trends are themselves ultimately the sum of millions of
often strongly differentiated, place-specific, micro-economic changes or constancies. Aggregate
trends are, in other words, the result of the underlying changes/inertia in the social and
territorial division of labour that result from millions of actions of varying size and impact. At
the same time, micro-economic evolutions are affected by the aggregate trends that are
themselves the result of the adding up the parts and their interaction effects. To examine these
meso- and micro-foundations of regional change attention was paid to the performance of two
industries and, in the case of the motor vehicles sector, to some of the microeconomic strategies
on which it depended. The starting point for analyses of these micro-evolutions is the profit-
seeking firm and its economic and political environment

Accounts of the Third Italy and of particular industrial realities should finally be seen, as they
were in Bagnasco's study, as just one part of a more systematic account of the structure and
development of the space economy. A more systematic account requires a consideration of the
interdependence of regional economies and of multiple worlds of production. An implication is
that greater attention should be paid to the relationships between development and under-
development.
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