

\\ 165 \\

**Economic Growth,  
Social Cohesion and Crime**

by

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## **Abstract**

This paper presents evidence on the importance of the social and political environment for local growth. We examine the relationship between a number of social and economic features of the Italian provinces in 1971 and their economic performance in the period 1971-1991. We find that local growth is weakly explained by structural variables, such as the sectoral composition of the industry or the degree of industrial specialization. By contrast, social environment clearly affects growth. Social capital and institutional efficiency are positively related to growth. Crime discourages manufacturing activity. Social cohesion—which we define as the large diffusion of shared values and low social conflict—has a strong positive influence on both income and employment.

*Key words:* Local growth, Social capital, Crime, Electoral behaviour

*JEL classification:* O40, R11

## 1. Introduction

A recent, growing literature provides empirical evidence on the role played by social and political factors in explaining the growth of different countries. Alesina et al. (1996) point out the importance of political stability, Alesina and Rodrick (1994) analyse the role of social inequality, Mauro (1995) argues that corruption and bureaucratic inefficiency are bad for growth. A large number of studies, for example Barro (1991), find that human capital is a key factor for growth, as suggested by Lucas (1988).

These works focus on cross-national comparisons, whereas less attention has been paid to the growth of different regions within the same country. Glaeser et al (1992) and Henderson et al. (1995) start to fill the gap, but their aim is to assess the importance of structural variables for local industry growth. Glaeser et al (1995) are the first to consider some social variables in a cross-regional analysis. Their result is partially disappointing: most of the variables considered are not correlated with growth.

Cross-regional analyses are especially interesting for countries characterised by large local inequalities such as Italy. The importance of social and political variables for local economic growth has always been emphasised in the Italian literature on industrial districts (see, for example, Bagnasco 1977, Becattini 1978, Brusco 1982, Trigilia 1986, Pyke, Becattini and Sengenberger 1990). The evidence provided by this large body of literature, however, is not based on a systematic comparison using econometric techniques.

Indeed, surprisingly little effort has been made to measure local economic performances and to relate them to economic, social and political features of local areas. The result is that we have almost no stylised facts in order to discriminate between competing theories and policy recommendations. An exception is Helliwell and Putnam (1995), built on Putnam (1993), who have recently provided econometric evidence of the positive role played by “social capital” and “civic engagement” for the growth of per capita incomes in Italian regions during the period 1950-1990. This result, however, is based on a limited number of observations and a small set of explanatory variables.

In this paper we investigate whether social and political environment plays an important role for local growth. We have three aims. First, we want to test the importance of social capital and civic engagement (Coleman 1990, Putnam 1993) at a finer geographical disaggregation level than the above mentioned work by Helliwell and Putnam. Second, we want to test whether the efficiency of local governments significantly affects growth. Third, and more important, we want to test whether the economic performance of local areas is affected by *social cohesion* and crime.

The latter point needs some comment. By social cohesion we mean the large diffusion of a set of shared values and low social conflict. In essence, the idea is that social conflict and crime produce strong negative externalities

especially for manufacturing activity. Crime raises the probability of losses and increases labour and insurance costs. By contrast, social cohesion increases labour productivity by reducing conflicts within firms and favouring a climate of participation and collaboration in industrial relations. Thus low conflict and low criminal activity improve the performances of the existing firms and attract new investments from areas characterized by a more disintegrated social environment.

It should be stressed that the above concept of social cohesion is different from the notions of social capital (Coleman 1990) and civic engagement (Putnam 1993), where the emphasis is placed on social networks and mutual trust. While the latter could be crucial ingredients for the development of a diffuse, small-firm economy, based on local entrepreneurship and a dense network of transactions between independent firms, social cohesion can be particularly important for an industrial structure based on medium and large-sized enterprises and hierarchical relationships both within and between firms.

To implement our analysis we concentrate on the growth of the 95 Italian provinces between 1971 and 1991. We take four measures of growth: manufacturing employment, total employment, total income and per capita income. Then we regress these measures on a large set of economic and social variables describing crime, welfare, infrastructures, education, industrial structure, labour market and electoral behaviour at the beginning of the period.

As a proxy for civic engagement we take an index of political participation, obtained by comparing the political elections of 1972 and the referendum on divorce of 1974. We employ four variables, among which the number of nursery-schools and the Km. of roads, as indices of the institutional performance and efficiency of local governments and central government at local level. As indicators of social cohesion we take two variables: an index of political cohesion—the percentage of votes of the first party in the political elections of 1972—and an index of labour conflict. Lastly, we take various indices of criminal activity, among which the number of murders.

The most striking results are two. The first is about what does not matter. Variables which often catalyse the interest of economists such as the average size of local units, the sectoral composition of employment and the degree of sectoral specialisation have little explanatory power. Most surprisingly, being specialised in the fastest-growing rather than in the slowest-growing sectors at the beginning of the period does not significantly affect manufacturing growth.

By contrast, social and political environment matters. Our indicator of political participation is positively related to growth, in accordance with the idea that civic-ness improves economic performance. Among our indicators of institutional efficiency both the nursery schools and the road system have some explanatory power, particularly on employment. Lastly, our expectation that social cohesion and crime influence growth is largely confirmed. The percentage of votes of the first party is the variable which mostly and most consistently

affects our measures of growth. Moreover, manufacturing employment is negatively related with hours lost for labour conflicts and homicides.

The exposition is organised as follows. Section 2 presents descriptive data on the economic performance of the Italian provinces. Section 3 presents the explanatory variables used in the econometric analysis. Section 4 illustrates our results. Section 5 contains summary and conclusion.

## 2. The economic performances of the Italian provinces

As stated, we use four variables in order to measure growth: manufacturing employment, non-agriculture employment, total value added and per-capita value added. Employment data are taken from the Census of Industry and Trade 1971 and 1991,<sup>1</sup> while income data are taken from the publications of Istituto Tagliacarne (Tagliacarne 1979, Istituto Tagliacarne 1993). In principle, total income is the best index of growth, since it takes productivity into account. However, data on income are nominal. Moreover, estimates of value added, particularly that concerning small firms, are likely affected by large measurement errors, whereas employment data are more reliable.

The gross growth rates of manufacturing employment are shown in Figure 1 (see also Table A1 in the Appendix). The first important observation is that many of the first ranks in the list are held by Southern and Central provinces. In order to find a Northern province we have to go down until the 15th place, held by Belluno.

A second observation is that, while the overall performance of Southern provinces is good, there are sharp differences among different areas. With few exceptions (Foggia and Brindisi), the provinces along the Adriatic coast and in Centre-Southern Appenines exhibit high growth rates, while a negative growth rate prevails for many Sicilian cities (Agrigento, Enna, Trapani, Siracusa).

Regarding the Centre-North, notice that almost all the provinces of the North-West and Tuscany are reducing their manufacturing employment; the reduction is dramatic in the cities forming the so called "industrial triangle": Genova (-39%), Torino (-29%) and Milano (-28%). By contrast, many North-Eastern cities perform well, especially in Veneto and Emilia: Belluno (+51%), Treviso (+46%), Padova (+45%), Vicenza (+41%), Modena (+34%), Reggio Emilia (+33%).

The good results of Southern areas are even more striking when looking at total employment (Table A1). However, this could be due at least in part to the fact that employment data reported by the Census of Industry and Trade ignore agriculture employment which was particularly important at the beginning of the seventies in Southern Italy. Many Southern provinces might have

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<sup>1</sup> We thank dott. Franco Lorenzini and Istat for providing comparable data.

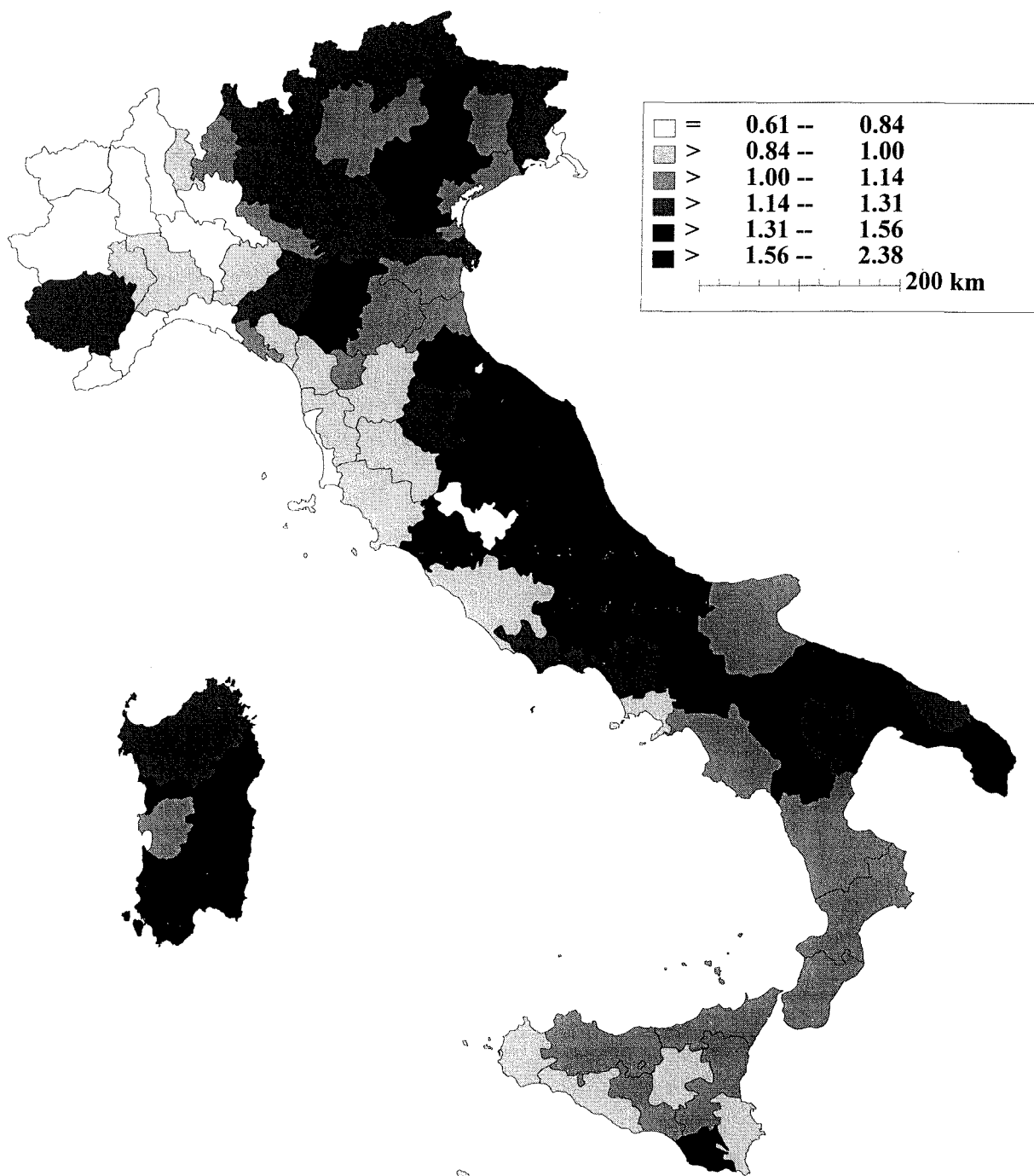


Fig 1. Gross growth rates of manufacturing employment (MEG)

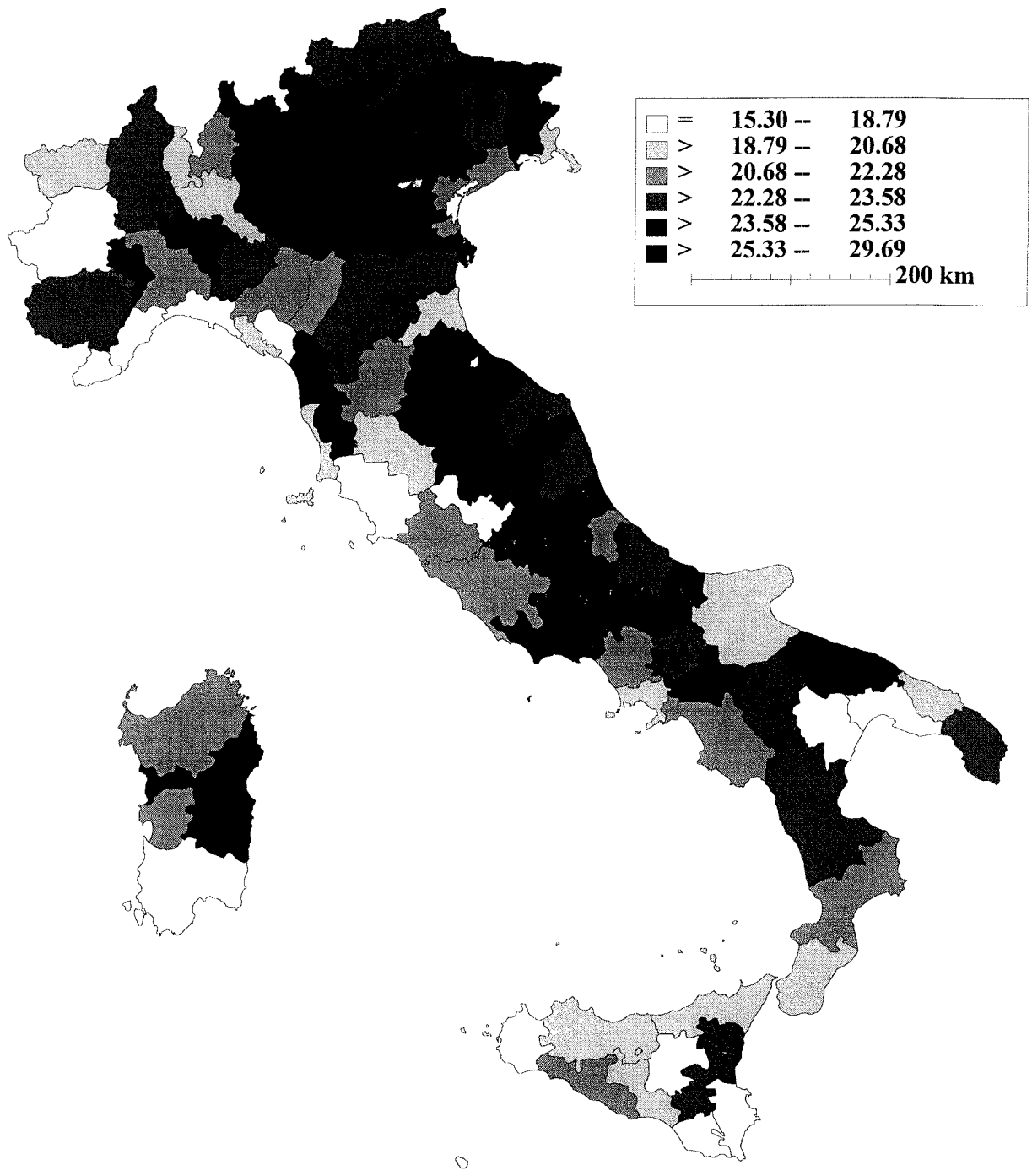


Fig. 2. Gross growth rates of per-capita nominal income (PCIG)

experienced a large reallocation of employment from agriculture to other sectors, leading to very high extra-agriculture growth rates. Moreover, a second caveat should be put forward: data on some services, particularly commerce, could ignore a substantial amount of part-time employment and even actual unemployment. Unfortunately, both the sources of possible distortions are not easy to check with currently available data. Hence the good performances of many Southern provinces should be taken with some caution.

Estimates of total income strengthen this suspicion (Table A1). The growth of several Southern cities appears considerably reappraised (the case of Enna is particularly striking). By contrast, the performances of North-Eastern areas are revalued: five Northern cities (Vicenza, Bergamo, Forlì, Padova and Verona) appear in the first fifteen places, as against three Southern cities and seven Central cities.

Similar considerations hold when per-capita income is considered (Figure 2 and Table A1). The average performance of Southern areas is not very different from that of Northern areas, so that the dispersion of per-capita income in 1990, as measured by the ratio of the standard deviation to the mean, is almost equal to that of 1971 (0.254 as against 0.259). In the terminology of convergence literature, we have no sigma-convergence during this period. This however does not mean that little changed. The rate of growth of the fastest-growing provinces was almost twice that of the slowest-growing. As a consequence, the relative position of some provinces changed dramatically. In 1971 the per capita income of Turin was about twice that of Rovigo (North-East); in 1990 the incomes are about the same. Two Southern cities, Avellino and Enna, had a similar story. In 1971 the per capita income of Avellino was only 66% of that of Enna; in 1990 Avellino is about 25% richer than Enna.

### 3. The explanatory variables

Table 1 lists the main explanatory variables we have considered in this study.<sup>2</sup>

In order to avoid feedback and reverse-causality problems all the data refer to the beginning of the period. The variables can be classified into seven groups.

In the first one we have two dummies for Southern Italy and Central and North-Eastern Italy respectively, in addition to an initial condition, i.e. per-capita income in 1971.<sup>3</sup>

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<sup>2</sup> Per-capita income in 1971 is taken from Tagliacarne (1979); electoral data are taken from Istat (1973b, 1975); data on employment and local units are provided by Franco Lorenzini (Istat), who made comparable the data sets of the two Censuses of Industry and Trade of 1971 and 1991; all the other data are taken from Istat (1971, 1972, 1973a).

<sup>3</sup> We do not include other initial condition: manufacturing employment in 1971 does not improve the fit of any of the regressions we have tried; the other initial conditions, i.e. total employment and value added are linear combinations of per-capita value added, manufacturing employment and the other explanatory variables.



Table 1. The explanatory variables

variable label	variable description
<i>miscellaneous</i>	
South	dummy variable for South
CNE	dummy variable for Centre and North-East
PCI	Per-Capita Income (nominal gross added value) in 1971
<i>manufacturing structure</i>	
ME	percentage of non-agriculture Employment held by Manufacturing in 1971
TMG	Theoretical Manufacturing employment gross Growth rate <sup>1</sup> 1971-1991
Size	an indicator of the average size of manufacturing local units correcting for the sectoral composition of employment <sup>2</sup>
Spec	an index of concentration of manufacturing sectors <sup>3</sup> in 1971
<i>labour market</i>	
AR	Activity Rate in 1971
ER	Employment Rate defined as non-agriculture employment in 1971 / population in 1971
EEA	Enrolments at the <i>collocamento</i> (the official Employment Agency) in 1971 / population in 1971
LC	hours lost for Labour Conflicts during the period 1970-1972 / pop. in 1971
<i>services and infrastructures</i>	
LEW	Local (municipal and provincial) Expenditure for Welfare in 1971 / population in 1971
Beds	number of beds in hospitals in 1971 / population in 1971
NS	number of pupils enrolled in Nursery Schools in the school year 1970-71 / population in 1971
Roads	km. of roads in 1971 / population 1971
<i>education</i>	
SLC	number of School-Leaving Certificates obtained in the school year 1970-71 / population in 1971
TSLC	number of Technical and professional School-Leaving Certificates obtained in the school year 1970-71 / population in 1971
Univ	dummy indicating the presence of University in 1971
<i>electoral data</i>	
PC	Political Cohesion: the percentage of votes obtained by the first party in the 1972 election for the <i>Camera</i>
EP	Electoral Participation: the ratio of the percentage of voters in the 1974 referendum and the percentage of voters in the 1972 election
<i>crime</i>	
Thefts	number of thefts in 1971 / population in 1971
REK	number of Robberies, Extorsions and Kidnappings in 1971 / pop. in 1971
Murders	number of murders in the period 1970-1972 / population in 1971

1. Let  $X_i$  and  $\hat{X}_i$  be the nationwide employment in the (two-digit) sector  $i$  in 1971 and 1991 respectively. Call  $x_i$  the manufacturing employment in sector  $i$  in the province in 1971 and  $x$  the total manufacturing employment in the province in 1971. Then  $TMG = \left( \sum_i x_i \hat{X}_i / X_i \right) / x$ .

2. Let  $y_i$  be the number of local units in sector  $i$  in 1971. Let  $Z_i$  be the national average size of local units in sector  $i$ , i.e.  $Z_i = X_i / Y_i$  where  $X_i$  is the nationwide employment and  $Y_i$  the number of local units in sector  $i$ . Then  $Size = x / \sum_i y_i Z_i$ , where  $x$  is defined as in note 1.

3. Let us order the sectors in such a way that  $x_i / X_i \geq x_{i-1} / X_{i-1}$ , where the symbols are as in note 1. Now set  $q_i = \sum_{k=1}^i x_k / x$ ,  $i = 1, \dots, n$ ,  $n$  being the number of sectors, and  $q_0 = 0$ . Then  $Spec = 1 - \sum_i X_i (q_i + q_{i-1}) / X$ , where  $X$  is total national employment.

The second group includes variables describing the manufacturing structure of the province. The first one is the ratio of manufacturing employment to extra-agriculture employment; it could be interpreted as a rough proxy for the manufacturing ability and experience of local labour force. The second variable, TMG, is an index measuring the 'goodness' of the sectoral composition of manufacturing employment. The idea behind TMG is that a city specialised in the fastest-growing sectors at the beginning of the period is favoured with respect to a city specialised in the slowest-growing sectors. TMG is a measure of such an initial advantage. Let us call "theoretical manufacturing employment" the number of employees that would have been there in 1991 if each local two-digit sector had experienced the same growth rate as the nation-wide sector; TMG is the ratio of theoretical manufacturing employment to actual manufacturing employment in 1971 (a more formal definition is given in Table 1, note 1). The third variable, Size, indicates whether its local units are small or large with respect to the nation, taking into account the sectoral composition of employment: a number greater than 1 indicates large size. More precisely, Size is the ratio of actual employment in 1971 to the employment that there would have been if each local unit had had the national average size of its sector. The latter number is obtained by multiplying the number of local units of each sector by the national average size of that sector and summing over sectors (see also Table 1, note 2). The fourth variable, Spec, is an index of sectoral specialisation of the province: Spec=0 indicates the maximum diversification while Spec=1 denotes maximum specialisation. It is essentially a concentration index obtained by computing the integral of a Lorenz curve (see Table 1, note 3).

The third group is formed by variables describing the situation of the labour market. Unfortunately, provincial data on wage rates are available only since 1986, so we did not include them in the data set. We have the activity rate, an estimate of the employment rate, a variable related to unemployment (EEA) and one of our two indicators of social cohesion: the number of hours lost for labour conflicts divided by total employment. Notice that for the latter variable we take the period 1970-1972 instead of the single year 1971. Since contracts are in force for three years, by taking a three-year period we are sure that renewals for all sectors took place exactly once, thus avoiding possible distortions due to the sectoral composition of the provinces.

In the fourth group we have variables describing the level of services and infrastructures: welfare expenditure, beds in hospitals, nursery schools, roads. As stated in the introduction, these variables play an important role in our analysis, since they can be considered as indices of institutional efficiency.

The fifth group is concerned with education: here we have the number of school-leaving certificates, both for all secondary schools and for technical and professional schools, in addition to a dummy indicating the presence of University.

The sixth group is made up of electoral variables. The first one is our main

indicator of social cohesion: the percentage of votes obtained by the first party in the 1972 political elections. The other variable, electoral participation (EP), which we interpret as an index of civic-ness, requires some illustration. Unlike in political elections, in referenda voting is not compulsory; hence a possible index of non-compulsory electoral participation is the percentage of voters in the referendum on divorce in 1974. A similar index is used by Putnam (1993). Another possible index is the ratio of this percentage and that of the political election in 1972, which can be considered as an estimate of the fraction of non-forced voters in 1972. We have chosen the latter, since it takes into account that many people in the South did not vote either in 1972 or in 1974, not because of lack of political participation, but because they were living abroad as emigrants.

Lastly, the seventh group collects three indicators of crime: the number of thefts, the number of robberies, extorsions and kidnappings, and the number of murders, all normalized by dividing by total population. Since for many provinces the number of murders in 1971 was very low or zero, we take the three-year period 1970-72. It is worth noticing that the number of murders is more reliable than the other two indices since often the latter crimes are not reported.

#### 4. Regression results

Now let us see which variables are correlated with growth and which are not. Table A2 in the Appendix shows the results obtained by regressing with OLS our four dependent variables on all of the explanatory variables appearing in Table 1 (standard errors are reported in brackets). We shall not comment on this table however, since substantially similar but clearer results are obtained with the reduced specification of Table 2, where the noise produced by regressors with poor explanatory power is removed. The restrictions implied by the latter specification cannot be rejected at the 5% level according to the F-test in all of the equations (see the last two lines of Table 2). Moreover, the regressions shown in Table 2 have two remarkable properties: first, all of the regressors included are significant at the ten per cent level in at least one of the equations; second, none of the regressors excluded is significant in any of the equations when reintroduced among the regressors.

Notice first that the fit is quite good. The corrected  $R^2$  reported in the last line are greater than .6 for all of the dependent variables: a figure considerably higher than those obtained in comparable studies (for example Glaeser et al. 1995).<sup>4</sup>

Let us now look at the coefficients, beginning from the top of the Table. The

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<sup>4</sup> This is not due to the high number of explanatory variables; indeed, higher corrected  $R^2$  could be obtained by suitably reducing the number of regressors in each of the four regression.

Table 2. Regression results with selected explanatory variables

	log(MEG)	log(EG)	log(IG)	log(PCIG)
constant	- 2.3471** (0.5474)	- 1.6823** (0.2772)	2.1998** (0.3060)	2.6925** (0.2613)
South	0.1095 (0.1144)	0.0641 (0.0579)	- 0.1409** (0.0639)	- 0.2110** (0.0546)
CNE	0.0119 (0.0595)	0.0777** (0.0301)	- 0.0434 (0.0333)	- 0.0673** (0.0284)
log(PCI)	- 0.5430** (0.1638)	- 0.1352 (0.0829)	- 0.7170** (0.0916)	- 0.6549** (0.0782)
log(ME)	—	—	—	—
log(TMG)	0.4560 (0.3511)	- 0.0566 (0.1778)	0.1571 (0.1963)	0.4195** (0.1676)
log(Size)	0.0118 (0.0664)	- 0.0218 (0.0336)	0.0657* (0.0371)	0.0106 (0.0317)
log(Spec)	0.0094 (0.0862)	0.0199 (0.0437)	- 0.0927* (0.0482)	- 0.0427 (0.0412)
log(AR)	—	—	—	—
log(ER)	- 0.0608 (0.1476)	- 0.3199** (0.0747)	0.1147 (0.0825)	0.1757** (0.0705)
log(EEA)	—	—	—	—
log(LC)	- 0.1001** (0.0493)	- 0.0358 (0.0250)	- 0.0358 (0.0276)	- 0.0345 (0.0235)
log(LEW)	—	—	—	—
log(Beds)	—	—	—	—
log(NS)	0.1249 (0.0892)	0.1161** (0.0452)	0.0624 (0.0499)	0.0279 (0.0426)
log(Roads)	0.0872** (0.0383)	0.0348* (0.0194)	- 0.0107 (0.0214)	0.0059 (0.0183)
log(SLC)	—	—	—	—
log(TSLC)	—	—	—	—
Univ	0.0798** (0.0398)	0.0420** (0.0202)	0.0063 (0.0223)	0.0015 (0.0190)
log(PC)	0.3200** (0.1322)	0.2758** (0.0670)	0.2329** (0.0739)	0.1477** (0.0631)
log(EP)	3.3742** (1.3615)	0.3831 (0.6895)	1.5330** (0.7611)	0.9310 (0.6500)
log(Thefts)	—	—	—	—
log(REK)	—	—	—	—
log(Murders)	- 0.0753** (0.0367)	- 0.0048 (0.0186)	- 0.0022 (0.0205)	0.0001 (0.0175)
$\bar{R}^2$	0.6483	0.8646	0.6539	0.6736
F-test	0.5831	0.2910	0.9913	1.5836
5% critical value	1.73	1.73	1.73	1.73

\* 10% significance level; \*\* 5% significance level

dummy for South is negative and significant in the last two columns (income and per-capita income). If data on value added are correct, this means that there is some important factor preventing growth in the South which our variables fail to capture. On the other hand, the dummy is not significant (and has the opposite sign) for manufacturing employment and total employment growth.

The initial condition, the value of per-capita income, has the expected sign and is highly significant in three out of four regressions. Hence, other things being equal, poor provinces grew faster than richer ones on average. In other words, we have  $\gamma$ -convergence (see Barro and Sala-i-Martin 1992). However, as Quah (1993) points out, this does not imply that dispersion of per-capita income decreases over time. In fact, as we have seen, there is no  $\sigma$ -convergence in our data set.

The importance of industrial structure is much smaller than one could have expected, at least when employment growth is concerned. ME (the percentage of manufacturing employment), which is never significant in the complete regression of Table A2 and has uncertain signs, has been excluded from the regression. Size is weakly significant for total income, but in the other equations the  $t$ -value is small and the sign is uncertain. The specialisation index (Spec) has a negative, weakly significant coefficient for total income. This might seem consistent with the results of Gleaser et al. (1992), who find that sectoral growth is positively related to sectoral diversity and negatively related to sectoral specialisation. However, the sign is reversed in the first two equations, so that a clear-cut interpretation is prevented. Lastly, TMG (i.e. sectoral composition) is significant at the 5 per cent level for per-capita income (at the 10 per cent level in the complete regression of Table A2), but it is not significant in the other equations. In particular, in the manufacturing employment equation, where it is expected to be highly significant, the  $t$ -value is surprisingly small (about 1.3). This suggests that the disadvantage of being specialised in the slowest-growing sectors, such as iron and steel metallurgy, is actually weaker than is commonly assumed.

Regarding the labour market, a high employment rate positively affects per-capita income, but has a negative impact on non-manufacturing employment. This makes sense: growth manifests itself mainly through employment increases where participation in the labour market is low, through productivity increases where participation is high.

Now let us skip to education. High education seems to play a relevant role for the performance of the provinces, as indicated by the dummy University. The coefficient is positive in all the equations but is strongly significant only for the employment variables. The university is a big employer and directly and indirectly affects the level of employment of a city. This may explain the positive impact on total employment. The university also has a positive effect on human capital, and this could explain the positive impact on manufacturing employment.

Now let us come to the main aims of this paper. According to Putnam, "strong society, strong economy" (Putnam 1993, p.176), meaning that civic engagement and good institutional performance at local level create a social environment which fosters economic growth and welfare. Our analysis confirms this view, and, more generally, the importance of social capital for the performance of the economy as in Helliwell and Putnam (1995). Two of our indicators of institutional efficiency, the number of nursery-schools (NS) and the Km. of roads (Roads), both standardised for population, have a positive impact on growth. While the latter particularly affects manufacturing, the former has a stronger impact on services. The degree of civic-ness seems to exert a large influence on growth, as shown by the coefficient of our indicator of electoral participation. As expected, this is strongly significant for both manufacturing employment and total income growth.

Labour unrest is detrimental for growth. Entrepreneurs clearly prefer to invest where the level of social conflict is low, as indicated by the coefficient for (LC), the number of hours lost in labour conflicts, which is consistently negative and significant at the 5% level for manufacturing employment. Notice that what matters here are the hours lost in conflicts in all sectors of the economy, not only in the manufacturing industry. The latter are positively related to the strength of the three main trade unions and to the level of unionisation, which in Italy may indicate strong confrontation but also low severity in conflicts and an active attitude to responsible negotiation (Trigilia 1986).

Investments keep away from those areas where criminal activity is particularly high and cruel. The number of murders, standardised for population, is a clear indicator of social insecurity, fear, distrust and illegal behaviour which hinder the development of new industrial activity and prevent employment growth. The coefficient has a negative sign and is significant for the performance of manufacturing employment. Extorsions and robberies are probably less reliable than homicides as an index of criminal activity because they are not always reported to the authorities. They are not significant, but become significant when homicides are omitted.

Lastly, the most striking result is the positive impact on growth of political cohesion (PC), measured by the percentage of votes obtained by the first party in the 1972 election for the Camera dei Deputati. It is the only variable which is strongly significant for all the dependent variables. This result has three possible explanations.

First of all, the result is consistent with the role played by specific political sub-cultures in the development of the industrial districts in the so called Third Italy, as emphasized by Bagnasco and Trigilia (1984, 1985). In these regions, "the Communist and Catholic subcultures fostered a localist regulation of the small-firm economy through their influence on industrial relations and on the activity of local governments" (Trigilia 1986, p.162).

But this is only part of the story. A strong political cohesion is also shown

by the electoral behaviour of some provinces in the South and in the Centre-South of the country, whose economic performance has been outstanding. In these areas, the regulation of local governments has not been particularly effective and it is difficult to find the networks of civic engagement which are necessary to induce the development of a diffuse industrialisation. The political cohesion of these provinces is probably related to economic success not because of political subcultures but for two other reasons. Political cohesion means social cohesion, the existence of a common set of shared values. This can raise productivity by improving job relations and reducing contrasts within firms.

Lastly, a high level of political cohesion may testify to the existence of political patronage. Probably political leaders elected in more cohesive areas have more bargaining power within their party, thus being more successful in conveying flows of public spending towards their constituencies.

## 5. Summary and conclusion

Our main findings can be summarised in four main points:

1. In the period 1971-1991, the best performance in terms of manufacturing employment was experienced by Centre-Southern provinces along the Adriatic coast and the Apennines, while the worst performance was that of the cities located in the Northwest and in Tuscany. Although some poor Southern areas reduced their gap with respect to the North-Centre, there was no overall reduction of the dispersion of per-capita income.

2. Local growth is weakly explained by structural variables. Average size, sectoral composition, degree of industrial specialisation have little and uncertain effect on economic performance.

3. Social environment clearly affects growth. Manufacturing employment is particularly sensitive to social factors, more than the other dependent variables. Entrepreneurs like social cohesion and low conflict. They keep away from areas where criminality and gun-shooting are the norm. Employment growth is also related to good infrastructures and human capital.

4. Electoral behaviour matters. This can be explained by the role of civic-ness (Putnam 1993) or political subcultures (Trigilia 1986), but other interpretations are possible. In particular political cohesion may attract investment or may signal the existence of patron-client relationships which convey resources from the central government to local economic communities.

## References

- Alesina A., Özler S., Roubini N., Swagel P. (1996), "Political instability and economic growth," *Journal of Economic Growth* 1, 189-211.

- Alesina A., Rodrik D. (1994) "Distributive politics and economic growth," *Quarterly Journal of Economics* 109, 465-490.
- Bagnasco A., Trigilia C. (1984) *Società e politica nelle aree di piccola impresa: il caso di Bassano*, Venezia, Arsenale.
- Bagnasco A., Trigilia C. (1985) *Società e politica nelle aree di piccola impresa: il caso della Valdelsa*, Milano, Angeli.
- Barro R.J. (1991) "Economic growth in a cross section of countries," *Quarterly Journal of Economics* 106, 407-43.
- Barro R.J., Sala-i-Martin X. (1992) "Convergence," *Journal of Political Economy* 100, 223-251.
- Becattini G. (1978) "The development of light industry in Tuscany: an interpretation," *Economic Notes*, 2-3.
- Brusco S. (1982) "The Emilian Model: productive decentralization and social integration," *Cambridge Journal of Economics* 6.
- Coleman J.S. (1990) *Foundations of social theory*, Cambridge, Harvard University Press.
- Glaeser E.L., Kallal H., Scheinkman J.A., Shleifer A. (1992) "Growth in cities," *Journal of Political Economy* 100, 48-71.
- Glaeser E.L., Scheinkman J.A., Shleifer A. (1995) "Economic growth in a cross-section of cities," *Journal of Monetary Economics* 36, 117-143.
- Henderson V., Kuncoro A., Turner M. (1995) "Industrial development in cities," *Journal of Political Economy* 103, 1067-1090.
- Istat (1971) *Annuario di statistiche provinciali*, Roma, Istat.
- Istat (1972) *Annuario di statistiche provinciali*, Roma, Istat.
- Istat (1973a) *Annuario di statistiche provinciali*, Roma, Istat.
- Istat (1973b) *Elezioni della Camera de Deputati e de Senato della Repubblica: 7 maggio 1972; dati riassuntivi*, Roma, Istat.
- Istat (1975) *Annuario di statistiche provinciali*, Roma, Istat.
- Istituto Guglielmo Tagliacarne (1993) *Il reddito prodotto in Italia: un'analisi a livello provinciale, anni 1980-1991*, Milano, Angeli.
- Lucas R.E. (1988) "On the mechanics of economic development," *Journal of Monetary Economics* 22, 3-42.
- Mauro P. (1995) "Corruption and growth," *Quarterly Journal of Economics* 111, 681-712.
- Pyke F., Becattini G., Sengenberger W. (1990) *Industrial districts and inter-firm co-operation in Italy*, Geneva, International Institute for Labour Studies.
- Quah D. (1993) "Galton's fallacy and tests of the convergence hypothesis," *Scandinavian Journal of Economics* 95, 427-443.



- Romer P.M. (1986) "Increasing returns and long-run growth," *Journal of Political Economy* 94, 1002-1037.
- Tagliacarne, G. (1979) *Il reddito prodotto nelle province italiane nel 1977: serie storica 1970-1976*, Milano, Angeli.
- Triglia C. (1986) "Small-firm development and political subcultures in Italy," *European Sociological Review*.
- Putnam R.D. (1993) *Making democracy work: civic traditions in modern Italy*, Princeton, Princeton University Press.

## Appendix

Table A1. Gross growth rates of the 15 fastest-growing and the 15 slowest-growing provinces

Provinces	MEG	Provinces	EG	Provinces	IG	Provinces	PCIG
<i>Fastest-growing</i>							
Teramo	2.38	Avellino	2.97	Latina	30.9	Rieti	29.7
Campobasso	2.17	Nuoro	2.91	Avellino	30.5	Avellino	29.6
Avellino	1.97	Ragusa	2.72	Rieti	30.1	Macerata	27.9
Isernia	1.96	Campob.	2.68	Teramo	29.0	Nuoro	27.8
Lecce	1.95	Cosenza	2.67	Frosinone	28.8	L'Aquila	27.7
Chieti	1.93	Potenza	2.65	Macerata	28.7	Rovigo	27.2
Nuoro	1.87	Teramo	2.65	Nuoro	28.6	Isernia	26.8
Frosinone	1.78	Isernia	2.64	Vicenza	28.6	Teramo	26.6
Ascoli P.	1.76	Benevento	2.56	Bergamo	28.5	Forlí	26.3
L'Aquila	1.73	Lecce	2.49	L'Aquila	28.2	Vicenza	25.9
Pescara	1.59	Frosinone	2.42	Forlí	28.2	Campob.	25.7
Potenza	1.57	Chieti	2.40	Padova	27.3	Asti	25.6
Pesaro-Urbino	1.56	L'Aquila	2.38	Verona	27.1	Padova	25.4
Macerata	1.52	Enna	2.35	Bari	27.1	Frosinone	25.4
Belluno	1.51	Catanzaro	2.32	Campobasso	27.0	Bergamo	25.3
<i>Slowest-growing</i>							
Alessandria	0.86	Cremona	1.46	Gorizia	19.6	Napoli	18.9
Agrigento	0.85	Terni	1.46	Messina	19.2	Ragusa	18.8
Terni	0.83	Gorizia	1.44	Cagliari	18.9	Trapani	18.7
Imperia	0.81	Livorno	1.41	Terni	18.4	Savona	18.6
Novara	0.80	Asti	1.41	Grosseto	18.3	Terni	18.4
Vercelli	0.80	Savona	1.31	Taranto	18.2	Grosseto	18.3
Gorizia	0.80	Varese	1.31	Massa C.	18.1	Genova	18.2
Aosta	0.74	Aless.	1.27	Savona	17.9	Massa C.	18.2
Milano	0.72	Trieste	1.25	Matera	17.8	Imperia	17.9
Savona	0.71	Novara	1.24	La Spezia	17.7	Siracusa	17.8
Livorno	0.71	Milano	1.22	Trieste	17.7	Torino	17.3
Torino	0.71	Pavia	1.17	Imperia	17.1	Matera	16.6
Pavia	0.67	Torino	1.17	Torino	16.9	Cagliari	16.3
Trieste	0.65	Vercelli	1.15	Genova	15.9	Taranto	15.8
Genova	0.61	Genova	1.11	Enna	14.1	Enna	15.3

Table A2. Regression results with all the explanatory variables

	log(MEG)	log(EG)	log(IG)	log(PCIG)
constant	-2.0173** (0.9221)	- 1.7050** (0.4752)	2.3411** (0.5035)	2.8997** (0.4163)
South	0.1181 (0.1342)	0.0580 (0.0692)	- 0.1804** (0.0733)	- 0.2517** (0.0606)
CNE	0.0346 (0.0765)	0.0962* (0.0394)	0.0050 (0.0418)	- 0.0462 (0.0345)
log(PCI)	-0.5587** (0.2153)	- 0.1481 (0.1110)	- 0.7331** (0.1176)	- 0.7126** (0.0972)
log(ME)	-0.0279 (0.1252)	0.0259 (0.0645)	0.0808 (0.0684)	0.0165 (0.0565)
log(TMG)	0.6319 (0.4206)	0.0516 (0.2168)	0.0944 (0.2297)	0.3156* (0.1899)
log(Size)	-0.0023 (0.0951)	- 0.0231 (0.0490)	0.0708 (0.0520)	0.0626 (0.0430)
log(Spec)	0.0246 (0.0927)	0.0251 (0.0478)	- 0.0842 (0.0506)	- 0.0700* (0.0418)
log(AR)	0.1120 (0.3246)	- 0.0374 (0.1673)	0.2630 (0.1772)	0.3878** (0.1465)
log(ER)	-0.0084 (0.2070)	- 0.3411** (0.1067)	- 0.0422 (0.1131)	0.0038 (0.0935)
log(EEA)	-0.0291 (0.0681)	- 0.0265 (0.0351)	- 0.0142 (0.0372)	- 0.0011 (0.0307)
log(LC)	-0.0667 (0.0574)	- 0.0267 (0.0296)	- 0.0331 (0.0313)	- 0.0322 (0.0259)
log(LEW)	-0.0951 (0.1169)	0.0093 (0.0602)	0.0353 (0.0638)	0.1095** (0.0528)
log(Beds)	-0.0372 (0.0745)	- 0.0399 (0.0384)	0.0034 (0.0407)	0.0056 (0.0336)
log(NS)	0.1804* (0.0979)	0.1326** (0.0505)	0.0697 (0.0535)	0.0051 (0.0442)
log(Roads)	0.0852** (0.0415)	0.0353 (0.0214)	- 0.0109 (0.0227)	- 0.0030 (0.0187)
log(SLC)	-0.0562 (0.1981)	- 0.0376 (0.1021)	0.0424 (0.1082)	0.0507 (0.0895)
log(TSLC)	0.1208 (0.1585)	0.0108 (0.0817)	- 0.1015 (0.0865)	- 0.1182 (0.0716)
Univ	0.0847* (0.0466)	0.0447* (0.0240)	0.0020 (0.0255)	- 0.0106 (0.0211)
log(PC)	0.2818* (0.1576)	0.2512** (0.0812)	0.1694* (0.0861)	0.0920 (0.0712)
log(EP)	2.8996* (1.5430)	0.1088 (0.7952)	0.7905 (0.8425)	0.6705 (0.6966)
log(Thefts)	0.0377 (0.0522)	0.0196 (0.0269)	0.0435 (0.0285)	0.0133 (0.0236)
log(REK)	-0.0426 (0.0374)	- 0.0133 (0.0193)	0.0186 (0.0204)	0.0098 (0.0169)
log(Murders)	-0.0661 (0.0448)	- 0.0132 (0.0231)	- 0.0245 (0.0245)	- 0.0041 (0.0202)
$\bar{R}^2$	0.6310	0.8529	0.6536	0.6937

\* 10% significance level; \*\* 5% significance level



1. Maria Cristina Marcuzzo [1985] "Yoan Violet Robinson (1903-1983)", pp. 134
2. Sergio Lugaesi [1986] "Le imposte nelle teorie del sovrappiù", pp. 26
3. Massimo D'Angelillo e Leonardo Paggi [1986] "PCI e socialdemocrazie europee. Quale riformismo?", pp. 158
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5. Paolo Bosi e Paolo Silvestri [1986] "La distribuzione per aree disciplinari dei fondi destinati ai Dipartimenti, Istituti e Centri dell'Università di Modena: una proposta di riforma", pp. 25
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31. Paolo Bosi [1988] "Indicatori della politica fiscale. Una rassegna e un confronto con l'aiuto di MICROMOD", pp. 25
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76. Enrico Giovannetti [1990] "Crisi e mercato del lavoro in un distretto industriale: il bacino delle ceramiche. Sez. II", pp. 145
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