

Culture of trust and regional development: an empirical analysis of the Third Italy

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Abstract

The industrial rise of the Third Italy has been characterised by the growth of dynamic networks of flexible, strongly related, small and medium-sized firms in craft-based industries (such as clothing and ceramics) in a number of specialised industrial districts. The rise of such a type of industrial development may be described as an endogenous growth process that necessitated several preconditions. It has often been mentioned that the particular social structure in the Third Italy (in terms of common values and norms, etc.) provided a basis on which this particular form of industrial development could emerge. In fact, this social-cultural dimension has been linked to relations of “trust” or “social capital” which not only stimulated interaction and co-ordination between the local actors but also enhanced the flexibility of the local production systems in many respects.

We present a long-term spatial analysis of Italy, which aims to explain the industrial rise of the Third Italy region in the post-war period. It attempts to assess empirically the impact of the socio-cultural dimension during its initial stage of development in the 1950s. A statistical analysis has been carried out to determine if a culture of co-operation could be held responsible for the particular form of industrial development in the Third Italy area in the 1950s. We focus attention on the extent to which the industrial rise of the Third Italy area was a rather accidental event that could also have occurred in other regions such as the First Italy (the industrial heartland of the North) and the Second Italy (the backward South).

The main results of the analysis point out that the Third Italy area was a distinct but not an unique area with respect to this social-cultural dimension in the early 1950s. The culture of trust variables, however, showed no significant impact on regional growth in small-scale traditional-artisanal industries in Italy during the period 1951-1981. However, when leaving out the three regions of the First Italy, a local culture of co-operation and trust turned into a significant relationship to industrial growth on the regional level in Italy. This outcome suggests that a local culture of co-operation and trust may have been responsible for this particular type of industrial development in the Third Italy area, in contrast to the South of Italy.

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1. Introduction

The main objective of this paper is to make an attempt to assess the impact of social capital on regional economic development. Here, we refer to social capital as “features of social organisation, such as trust, norms and networks that improve the efficiency of society by facilitating coordinated action” (Putnam, 1993, p. 167). In economic terms, these relations of trust are believed to be highly beneficial because they lower transaction costs, favour transmission and exchange of knowledge, and stimulate the effectiveness and responsiveness of institutions of governance, such as government policy (Fukuyama, 1995; Knack & Keefer, 1997).

This paper focuses on a long-term analysis of Italy in order to assess empirically the impact of this socio-cultural dimension on the economic performance of regions. Since Bagnasco (1977), much has been said on the industrial rise of the so-called Third Italy (that is, the Northeast and Central part of Italy) in the post-war period. Most attention has attracted the particular nature of this development, based on a large number of local networks of flexible, small and medium-sized firms specialised in craft-based industries. Some have stated that this particular form of industrialisation in the Third Italy area emerged on the basis of a distinctive social structure that encouraged interaction and co-ordination between the local economic actors (Trigilia, 1986).

However, it is remarkable how few studies have been carried out to provide empirical support for these theoretical statements. Many detailed case studies of particular industrial districts have addressed this topic and have provided insight in the actual relationship between trust and regional economic development. However, they all remain very descriptive while they do not allow for making a comparison between these areas. Other empirical studies with a broader focus (Putnam, 1993; Helliwell & Putnam, 1995) have associated social capital with economic development in general rather than with the aforementioned particular type of industrial development in which it is expected to play a crucial role.

This paper makes a first attempt to fill these empirical gaps in the literature. First, we make use of discriminant analysis in order to determine the extent to which the Third Italy area could be considered an unique area with particular socio-cultural characteristics during its initial stage of development. In other words, we examine the question whether this type of social culture could also be found in the First Italy (the industrial heartland of the Northwest) and the Second Italy (the backward South). Secondly, we make use of a multiple regression technique in order to determine empirically the degree to which a local culture of trust has actually contributed to the

growth of this particular type of industrial development in this part of Italy during the post-war period.

To address these questions, this paper is divided in three parts. To start with, Section 2 discusses the relationship between social capital and economic development in general. More in particular, we devote attention to problems of how to define social capital and in what ways it may have impact on economic growth. In Section 3, we set out the main features of the particular type of industrial development that took place in the Third Italy during the post-war period. Moreover, we link this form of industrialisation explicitly to the notion of social capital. In Section 4, we present the main outcomes of the long-term analysis of Italy. To begin with, we explain how we measure social capital in the Italian case. Then, we set out what kind of methodology we used in order to examine empirically whether a culture of trust could be held responsible for the fact that this particular form of industrialisation took place in the Third Italy area, and not elsewhere in Italy. Finally, we present the main outcomes. In Section 5, we make some concluding remarks.

2. Social capital and economic development

Recently, there has been a remarkable interest in the social foundations of economic development (Fukuyama, 1995; Landes 1998; Nyfer, 1998). Mainstream economics has ignored this non-economic dimension of economic growth for a long time. This is not to deny that some economists have given witness of the importance of culture for economic growth in the past (e.g. Arrow, 1972). However, it is fair to say that neo-classical economics regards actors as individual persons who act independently and maximise their utility. In other words, their actions do not undergo any impact of the social context, such as norms, social networks and trust (Coleman, 1990, p. S95-6). Sociologists who have traditionally taken a more structural approach towards the real world have been more eager to link culture to economic development (see Granovetter). For example, Weber acknowledged a long time ago that countries dominated by Protestantism can regularly be associated with high levels of entrepreneurship and trust. It is interesting to see how these ideas are again echoed in recent influential works of Fukuyama (1995) and Landes (1998) and reconfirmed by empirical studies (see e.g. Knack & Keefer, 1997).

This section discusses the recent literature on the relationship between social capital and economic development. In Section 2.1, we devote brief attention to problems of what is social capital, and how may it be defined. In Section 2.2, we set out in what ways social capital may

have impact on economic growth. We also discuss empirical studies that have addressed this issue. In Section 3.3, we explicitly link the notion of social capital to the particular form of industrialisation that developed in the Third Italy area in the post-war period. By doing so, we explain that social capital gets a different and more direct meaning when linking it to this type of industrial development.

2.1 What is social capital?

There exist many definitions of social capital since Loury introduced this notion. The following definitions have been taken from the most recent literature on the subject. The World Bank defines social capital as “the norms and social relations embedded in the social structures of societies that enable people to coordinate action to achieve desired goals” (www.worldbank.org/poverty/scapital). According to Morgan (1997), “social capital refers to features of social organisation, such as networks, norms and trust, that facilitate coordination and cooperation for mutual benefit” (p. 493). This definition comes close to the one of Putnam et al. (1993) who refer to “trust, norms and networks that improve the efficiency of society by facilitating coordinated action” (p. 167). Knack & Keefer (1997) refer to “trust and norms of civic-minded behaviour as manifestations of social capital” (p. 1252). Fukuyama (1995) views social capital as a component of human capital “... that allows members of a given society to trust one another and cooperate in the formation of new groups and associations” (p. 90).

In general, these definitions are all very broad, incorporating many aspects, such as networks, norms and trust. Accordingly, it seems very difficult to grasp the essence of social capital because of its intangible nature. According to Coleman (1990), “if physical capital is wholly tangible, being embodied in observable material form, and human capital is less tangible, being embodied in the skills and knowledge acquired by an individual, social capital is less tangible yet, for it exists in the *relations* among persons” (p. S100-1).

However, the definitions tend to share the view that social capital may perform an important asset function or may constitute a productive resource that enables co-operation and lowers transaction costs in general. Coleman (1990) states that social capital should be seen as a productive resource within a structure of relations between actors available to actors. This is especially true when the social structure is characterised by a high rate of closure in order to facilitate social capital to be effective. For example, norms can only become effective when sanctions can actually constrain the actions of actors that have conducted deviant behaviour. Moreover, game theory teaches us that social capital leads to co-operative solutions because

norms of civic co-operation impose negative externalities on free-riders (Knack & Keefer, 1997). However, although trust is an extremely valuable resource, trust is, however, not a commodity that can be bought at the market place. We elaborate on these issues more in detail in the next section.

2.2 Social capital and economic development

There may be five ways to link the notion of social capital to economic performance. We briefly describe each of them in the following. Then, we discuss two contrasting views concerning the impact of associational activity on economic performance.

First of all, social capital is a prerequisite for transactions to take place. Uncertainty is everywhere. When there is no trust potential actors can build on, they are very reluctant to enter in a transactional activity because uncertainty and risks are too high. This is especially true for so-called trust-sensitive transactions, such as goods that are delivered in exchange for future payment (Knack & Keefer, 1997). For example, in a low-trust society, savers would not put their money on banks, banks would be very reluctant to supply capital for investment, and firms would be unable to realise their investment plans due to a shortage of capital. According to Knack & Keefer (1997), “societies characterized by high levels of trust are also less dependent on formal institutions to enforce agreements. Informal credit markets dependent on strong interpersonal trust can facilitate investment where there is no well-developed formal system of financial intermediation, or where lack of assets limits access to bank credit” (p. 1253).

Second, social capital may lower transaction costs. When there is high trust, there is less need to specify all details of a transaction in formal written contracts. Norms that are shared effectively constrain opportunistic behaviour. There is also less need to put much effort to control and monitor the execution of the transaction. Moreover, there are less likely to be costly juridical conflicts between partners. For example, Harrison (1992) has interpreted the tremendous growth in lawsuits in Silicon Valley in the United States as evidence of ‘potential erosion in the social basis’ for further economic development of this region. Thus, transactions based on trust and shared norms are expected to be more efficient and, thus, less costly than explicit contracting and monitoring, and much more effective than enforcement by the state (Putnam, 1993).

Third, social capital facilitates the transmission and exchange of information and knowledge. When there is a high rate of trust, communication proceeds relatively smoothly. This is especially important for the transmission of non-codified or tacit knowledge, which is, by nature, much more difficult to communicate (Malmberg & Maskell, 1997; Storper, 1997).

Moreover, there is a growing awareness that innovations are more often the result of interaction and co-operation between actors rather than the outcomes of independent actions of isolated firms or other organisations (Boschma, 1999). Therefore, social capital in high-trust societies may play a very active role in interactive learning and thus, in stimulating innovations (Morgan, 1997).

Fourth, social capital may stimulate the effectiveness and responsiveness of institutions of governance, such as government policy. This relationship between social capital and institutional performance has been confirmed on the regional level by an empirical study of Putnam (1993) in Italy. A reason for this is that civic norms may be helpful to overcome the collective action problem in monitoring politicians and other public actors. Moreover, social cohesion (consensus) may have a positive impact on policy flexibility when changing circumstances require so. When institutional performance increases, it may have a positive effect on the business climate. In particular, in high-trust societies, governments are more likely to be reliable and trustworthy, which makes it less risky for firms to engage in long-term investments. This is especially true in high-income societies where governments have more taxes to spend in order to provide good services and where educated people have more demands with respect to the quality of the public services offered. However, Knack & Keefer (1997) warn for the danger of reverse causality, because public institutions may be causes of, as well as substitutes for trust and civic co-operation. That is, on the one hand, “if formal institutions enforce private agreements and laws more effectively, trust and adherence to civic norms among private citizens may be strengthened” (p. 1279). However, on the other hand, “societies with low trust require more robust formal institutions if they are to undertake the exchanges that are crucial to growth. ... Without such a government, cooperation would be nearly impossible and trust would be irrational” (p. 1279).

Fifth, social capital may stimulate the accumulation of human capital. This is because in high-trust societies, firms are more likely to hire people because of their educational classifications rather than because of blood ties or personal knowledge. Moreover, Coleman (1990) has demonstrated that social capital in the family and in the community does affect the formation of human capital, which he measured as a reduction in the probability of dropping out of high school.

However, there is anything but agreement in the literature on these positive impacts of social capital on economic performance. In essence, there are two conflicting views that point to adverse impacts of social capital (or more in particular, associational activity) on economic development. On the one hand, Putnam stresses the overall positive impact of associations on economic development. According to Putnam (1993), associations “... instill in their members habits of cooperation, solidarity, and public-spiritedness” (pp. 89-90), which provide solutions to

overcome collective action problems. On the other hand, Olson (1982) highlights the negative impact of rent-seeking associations on economic welfare. This may occur when their economic self-interest goes at the expense of society's welfare at large (see also Porter, 1990). Grabher (1993) has argued that associations may even be self-destructing because they may result in a loss of dynamics and innovative behaviour due to lock-in (Boschma & Lambooy, 1999). According to Knack & Keefer (1997), empirical research has not led to any final result with respect to this debate. They found in a broad study based on the World Values Surveys for a sample of 29 market economies that group membership had no significant effect on economic growth during the period 1980-1992.

Finally, we draw attention to some empirical studies on this subject. These studies tend to share the view that social capital exhibits a positive impact on economic performance. The study done by Knack & Keefer (1997) mentioned previously, concluded that social capital has a strong and significant relationship to economic growth over the 1980-1992 period (this is, however, less true for the period 1960-1992). Another finding was that the impact of trust on growth is higher in poorer countries. In fact, "trust is more essential where contracts are not reliably enforced by the legal system, and where access to formal sources of credit is more limited due to an underdeveloped financial sector" (p. 1260). This stands in contrast to the view that "greater specialization increases the number of transactions between strangers, and over time and across space..., trust should reduce transaction costs more in richer than in poorer countries ..." (Knack & Keefer, 1997, p. 1260).

Putnam (1993) carried out an empirical analysis on social capital in order to explain differences in institutional and economic performance between Italian regions. The main outcome was a strong difference in institutional performance of regional governments (e.g., in terms of efficient provision of public services) between the more civic-minded North and Central part of Italy and the less civic South of Italy. In another study, Helliwell & Putnam (1995) showed that, holding initial income constant, Italian regions with a more developed 'civic community' had higher growth rates in the period 1950-1990 period. However, contrary to Putnam's belief and finding, Knack & Keefer (1997) concluded in their study that "horizontal networks – as measured by membership in groups – are unrelated to trust and civic norms (controlling for education and income) and to economic performance" (p. 1284).

3. The industrial rise of the Third Italy

As stated in the introduction, a large body of literature has suggested that this area in the Northeast and Central part of Italy had witnessed the development of a particular form of industrialisation during the post-war period. Here, we briefly describe the main characteristics of the Third Italy area, as compared to the other Italian regions. In Section 3.1, we put the industrial rise of the Third Italy into a historical perspective by presenting industrial growth rates by region in Italy in the post-war period. In Section 3.2, we devote attention to three features of this particular type of industrial development in the Third Italy, that is, small-scale industrialisation, a predominance of craft-based and engineering industries, and the spatially concentrated form of production in so-called Marshallian industrial districts. The objective of this exercise is to determine whether the Third Italy area (as compared to other Italian regions) may indeed be regarded as a particular case in this respect. In Section 3.3, we go more into detail when considering the peculiar socio-cultural characteristics of the Third Italy area. There, we link the notion of social capital to this particular form of industrialisation of the Third Italy.

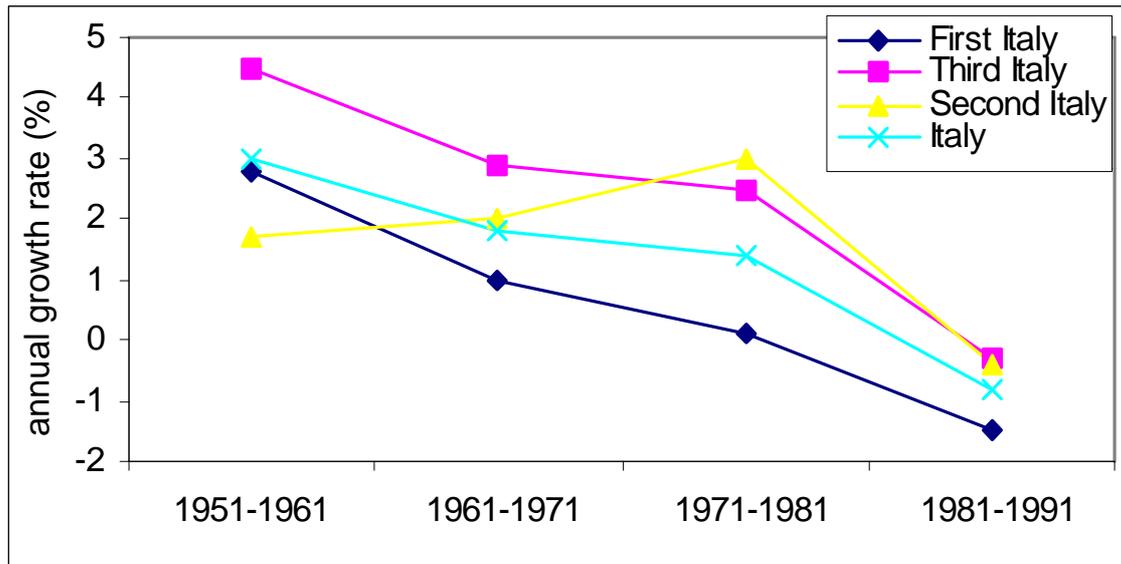
3.1 The industrial evolution of the Third Italy.

Many sources demonstrate that the Central part of Italy had already acquired an average industrial position with respect to the North and South of Italy long before the Second World War (Zamagni, 1993). In the first part of the twentieth century, the Central part of Italy gave evidence of a stable and modest economic growth that was much higher than the South of Italy (Zamagni, 1987). In that period, it more or less equalled the growth rate of the industrial heartland of Italy (the regions of Lombardy, Piedmont and Liguria), better known as the “Old Industrial Triangle Turin-Milan-Genua” (Bianchi, Casini-Benvenuti and Maltinti 1987). As a consequence, it would be fair to say that the rapid economic growth of the Third Italy area in the post-war period was a consolidation of a process that had already been going on for a long time (Zamagni 1993).

We now take a closer look at the post-war industrial development by region in Italy. In Figure 1, we have compared the annual industrial growth rates (measured as changes in the employment of the manufacturing industry) of the three main areas in Italy for the period 1951-1991. We have defined the three areas as follows. The First Italy concerns the old industrial heartland in the Northwest of Italy, which consists of the core industrial regions of Lombardy, Piedmont and Liguria. The Third Italy area is here defined as the Northeast and the Central part of Italy, which includes the regions of Trentino Alto-Adige, Veneto, Friuli-Venezia-Giulia, Emilia

Romagna, Tuscany, Umbria and Marche. The South of Italy (or ‘Mezzogiorno’) concerns the remaining part of Italy, including the region Lazio with the capital Rome.

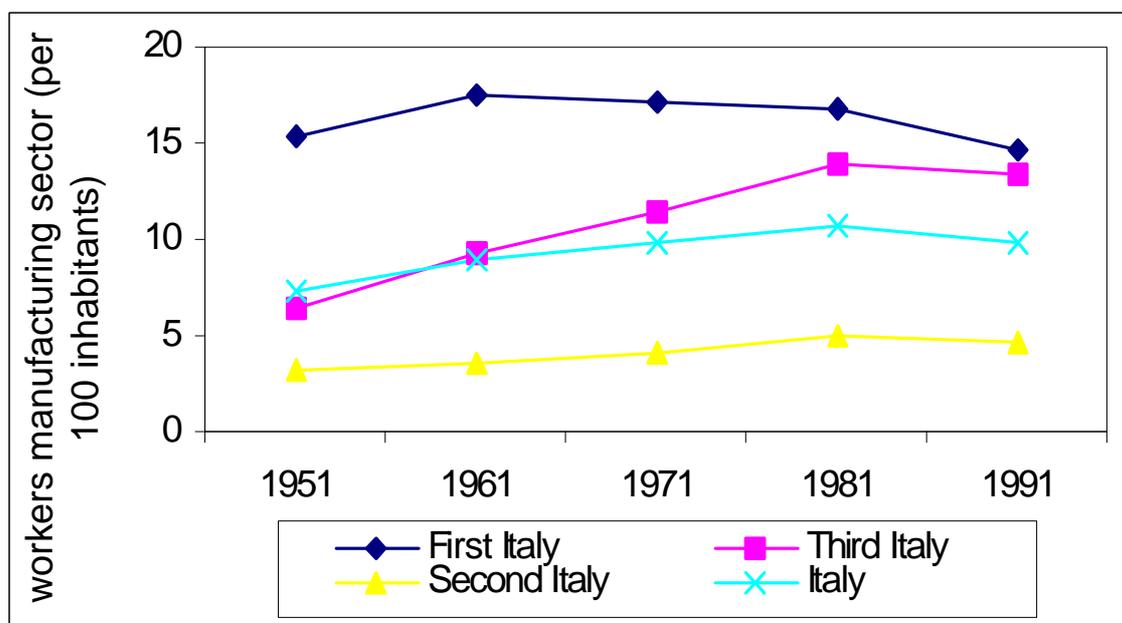
Figure 1. The annual growth rates of workers in the manufacturing sector in Italy by region 1951-1991



Sources: elaborations from Censimento Generale dell'Industria 1951, 1961, 1971, 1981, 1991 (see Boschma, 1998)

As Figure 1 shows, the Third Italy area enjoyed the highest industrial growth in the period 1951-1991 (apart from the period 1971-1981). In particular, the regions of Emilia Romagna, Marche, Tuscany, Veneto and Friuli-Venezia-Giulia and Tuscany demonstrated above average industrial growth levels throughout the whole period. Since the 1960s, the South of Italy has also done remarkably well (especially the regions of Lazio, Abruzzi-Molise and Puglia). By contrast, the Northwest (that is, the First Italy) performed quite poorly. However, in the 1980s, all areas, including the Third Italy, went through a period of industrial decline (see Bianchi, 1994). Figure 2 shows the degree of industrialisation (measured as the number of workers in the manufacturing industry per 100 inhabitants) by region throughout this same period. It clearly shows how rapid this process of industrialisation had advanced in the Third Italy area. The Third Italy had almost reached the same level of industrialisation of the First Italy by 1991. The South, however, continued to lag behind in this respect (with the notable exception of the region of Abruzzi-Molise).

Figure 2. The number of workers in the manufacturing sector per 100 inhabitants in Italy by region 1951-1991



Sources: see Figure 1

3.2 The particular type of industrial development in the Third Italy

In Section 3.1, we concluded that the Third Italy area had experienced the highest industrial growth in Italy in the post-war period. However, this is only part of its story. The industrial development of the Third Italy has been associated with a particular form of industrial development, described as “flexible specialisation”, “neo-Fordism”, or “new industrial space” (Piore & Sabel, 1984; Scott 1988). In short, this type of industrialisation has been associated with dense networks of flexible, strongly related, mostly small and medium-sized firms in mainly craft-based industries that are concentrated in specialised industrial districts. It was a surprise to many that such a particular form of industrialisation could be ever associated with high industrial growth. We discuss the theoretical logic behind these spatial production systems in Section 3.3. In this section, we measure empirically whether the Third Italy area (as compared to other two areas) may indeed be regarded as a particular and unique case in this respect. Here, we confine

ourselves to three main features of this particular type of industrial development in the Third Italy, that is:

- the small size of the industrial firms. The importance of small and medium-sized firms for industrial growth was something quite unexpected. In the 1970s, these were either regarded as highly dependent on large firms, or as marginal (pre-capitalist) activities that were seen as inferior as compared to large firms in terms of technology, scale economies, access to capital, capability to export, etc. (see Becattini, 1989; Bianchi and Gualteri, 1990).
- the industrial specialisation involved, which was based on traditional, craft-based industries and machine-tools. These traditional artisanal industries in which these small-sized firms mainly manifested themselves, had often been predicted a poor future in Western countries. For one thing, these sectors were conceived to be most vulnerable to competition from low-wage countries because of their low rates of value-added and low intensity of technology.
- the spatially concentrated form of industrial production. These small industrial firms were often located in relatively small areas where they formed highly dynamic and efficient local production systems that sometimes succeeded to conquer world export markets. These networks of mostly small and medium-sized firms, characterised by extensive local interfirm linkages have often been called ‘Marshallian industrial districts’ (Becattini, 1987; Markusen, 1996). Bianchi (1994) described them as follows: “.. a territorial agglomeration of small firms, normally specialised by product type, product components or process phases, held together by interpersonal links, by a common “social culture” amongst the workers, entrepreneurs and politicians and enveloped by an ‘industrial atmosphere’, which circulates information, favours professional training facilitates the diffusion of innovation, thereby generating important flows of external-internal economies” (p. 4). The idea that competitiveness of localities may be associated with organisational and cultural dimensions was in contrast with the quite common view that the economic performance of localities could only be defined in terms of costs of transport and location. What is more, few would have predicted the industrial rise of regions (such as the Third Italy area) that had not experienced any major industrial development in the past (Pyke and Sengenberger, 1991).

With respect to the small-scale dimension of industrial development in the Third Italy, we examined the importance of small firms in the manufacturing sector in the various regions of Italy. As shown in Table 1, the size of the industrial firm has been split into three categories:

small firms (< 50 employees), medium-sized firms (50-500 employees) and large-scale firms (> 500 employees). The importance of the three categories has been measured in 1951 and 1991 with the aid of location quotients. These have been defined as the proportion of all workers in the region employed in the particular size category, divided by the proportion of all workers in Italy employed in the same size category. Table 1 confirms that small industrial firms are (to some degree) predominant in the Third Italy. However, this is even more so in the South of Italy in the early 1950s, which is, by the way, contrary to the situation of 1991. Moreover, the data show that large-scale industrialisation has hardly made any progress in the Third Italy area. As expected, large-scale firms are over-represented in the industrial heartland of the First Italy. This is also true for the South of Italy that shows a remarkable increase in the importance of this latter category in the period 1951-1991.

Table 1. The size of the firms* in the manufacturing sector by region in Italy in 1951-1991, measured as location quotients

	small firms		medium-sized firms		large firms	
	1951	1991	1951	1991	1951	1991
First Italy	0.71	0.89	1.18	1.15	1.33	1.21
Third Italy	1.13	1.09	0.97	0.97	0.79	0.60
Second Italy	1.59	1.03	0.56	0.78	0.43	1.33
Italy	1.00	1.00	1.00	1.00	1.00	1.00

* small firms: < 50 workers; medium-sized firms: 50-500 workers; large firms: >500 workers

Sources: see Figure 1

With respect to the second feature, the industrial specialisation in each region has been measured by showing the growth rates of employment in some selected traditional, artisanal industries in the period 1951-1991. Following Bellandi (1989), the following traditional (mainly craft-based) industries have been selected: textiles, footwear and clothing, leather goods, wood and furniture, non-metallic mineral products (including ceramics, marble, jewellery), and metallic engineering. This merely confirms the study of Sforzi (1989), who stated that most industrial districts of Italy were specialised in artisanal industries, like clothing, footwear, wooden furniture, textiles, and mechanical engineering. Brusco & Paba (1997) also concluded that industrial districts could mainly be found in industries (having the highest shares of workers in industrial districts in their respective industries) like textiles, clothing and footwear, wood and furniture, leather goods and

non-metallic mineral products. However, in contrast to Brusco & Paba (1997), we regarded plastics & others as a too diverse sector to be included in our analysis. Table 2 confirms that the Third Italy shows indeed the highest growth rates of these selected industries as compared to the other two areas for the period 1951-1991. The Second Italy tends to perform rather well in industries like wood and furniture, non-metallic mineral products and metallic engineering.

Table 2. The annual growth rates of employment in small and medium-sized firms* in several (mainly craft-based) industries in Italy by region 1951-1991

	leather goods	Textiles	Footwear and clothing	wood and furniture	non-metallic mineral prod.	metallic engineering
First Italy	-0,2%	-0,8%	0,2%	0,3%	-0,1%	3,4%
Third Italy	8,4%	1,9%	3,8%	2,7%	1,3%	8,9%
Second Italy	3,2%	0,6%	-0,0%	2,5%	1,9%	6,6%
Italy	3,0%	-0,1%	1,3%	1,0%	1,0%	5,4%

* small and medium-sized firms: < 500 workers

Sources: see Figure 1

With respect to the third feature of the Third Italy, that is, the spatially concentrated form of industrial organisation, we present some literature that made an attempt to identify industrial districts across the Italian regions (Sforzi, 1989; 1991; Brusco & Paba, 1997). Becattini (1989) claimed there existed about 60 to 100 industrial districts in Italy, depending on the criteria used. Sforzi (1989; 1991) made use of geographical, social and economic indicators. He counted a total amount of 61 Marshallian industrial districts which employed about 906.000 people in 1981 (about 5.4% of all jobs in Italy). As expected, most of the districts involved (46) were actually located in the Third Italy area, of which the regions of Marche and Veneto stand out in particular. The Northwest (or First Italy) had developed 13 of them, while only one of them could be found in the South of Italy. Brusco & Paba (1997) used four indicators to examine whether 955 labour market areas in Italy could be related to a type of industrial development that could somehow be associated with industrial districts. In order to fulfil this condition, the scores of each area should be higher than the national average with respect to their degree of industrialisation, their rate of small-scale industrialisation (less than 100 employees), the degree of industrial specialisation, and the rate of smallness of the industrial specialisation involved. They counted a total of 149 industrial districts in 1951, employing about 360,000 workers (about 10 per cent of

manufacturing employment in Italy). These districts were fairly evenly distributed among the Italian regions, including the South of Italy (regions of Campania and Calabria). However, the situation had changed in 1991: the 238 industrial districts identified, employing 1.7 million workers (about 32 per cent of total employment in the manufacturing sector in Italy) were mainly found in the First and Third Italy areas, as opposed to the South of Italy. In sum, the Third Italy area, as expected, host many industrial districts, but also the First Italy area does rather well, leaving behind the Second Italy. We should put in mind, however, that the study of Brusco & Paba (like others) keeps on suffering from serious drawbacks due to a lack of available data. The most serious shortcoming is that this analysis does not account for two of the most essential characteristics of industrial districts, that is, the organisational and cultural dimension. For example, they ignore the linkages that may have developed between the small and medium-sized firms involved: there is no distinction being made between small firms operating independently and small firms that are part of a dynamic network. Moreover, data were not available on the district level, which is a more detailed level than labour market areas. The method used also excludes the possibility that industrial districts could be measured in large urban areas (for instance, the degree of industrialisation in an area should be higher than the national average).

This section has provided evidence of the fact that the nature of industrial development in the Third Italy area is to some degree distinct from the two other areas in Italy. Despite the fact that the Third Italy and the Second Italy are characterised by the predominance of small-sized firms and craft-based industries, the South of Italy did not experience to any degree the development of industrial districts as in the two other areas. Moreover, the Third Italy differs from the First Italy in terms of the importance of small-scale industrialisation in craft-based industries, though the Northwest had generated quite a number of industrial districts.

3.3 Social capital and the Third Italy

Here, we briefly discuss several theoretical frameworks which have been put forward in order to explain the industrial rise of the Third Italy. By doing so, we make explicit what role social capital may have played in the rise of this form of industrialisation in the Third Italy area during the post-war period. In this respect, we elaborate on the theoretical ideas put forward in Section 2 and associate them explicitly to the type of industrial development as described above. Since the 1970s, there have been several attempts to explain the industrial rise of the Third Italy (Becattini 1987). In a nutshell, we discuss the most influential ones, without pretending to be exhaustive.

It was quite common in the 1970s to reduce this form of industrial development in the Third Italy to external factors (Paci 1973; Graziani 1975; Goglio 1982). They referred to the strategy of large corporations in the Northwest of Italy to decentralise their production in order to circumvent restrictions imposed by the trade unions. This led to the development of small and medium-sized firms, which, therefore, depended heavily on these large firms (Goglio 1982). The result of this strategy of large corporations was that labour costs could be reduced and the flexibility of labour could be re-established. This dependency relationship or “division of labour” was mainly expressed in two ways (Brusco 1991). Either the small and medium-sized firms absorbed the (temporary) high peaks of demand which exceeded the capacity of production of the large corporations (in the case of the same product) (Paci 1973), or the small and medium-sized firms operated as major suppliers to the large corporation (Graziani 1975).

However, this explanation is far from persuasive for several reasons. To start with, it is hard to reconcile the high industrial growth rates in both the First Italy and the Third Italy since the early 1950s (as Table 1 demonstrated) with this tendency of large firms to decentralise their production from the late 1960s onwards. Further, this explanation is not consistent with the fact that trade and capital flows between the First and the Third Italy have hardly been observed. Last but not least, it ignores the importance of endogenous (that is, autonomous) growth based on the dynamics of local production systems with an extreme division of labour among local firms. Nevertheless, this approach may be relevant to some extent. It remains plausible that the First Italy, in contrast to the Third Italy, failed to adjust to market changes requiring (labour) flexibility in some traditional industries. This may, for instance, provide an explanation for why the Lombardy region witnessed a decline in footwear production of 29% in the period 1951-1981, whereas the Third Italy demonstrated an increase of production in the same period (Bruni 1986).

The so-called Florentine school (Becattini 1987; 1989) has interpreted the industrial rise of the Third Italy as an endogenous growth process. In essence, this growth process was achieved through interaction and co-operation based on (economic, geographical and cultural) localness in these local production systems. In particular, this school of economic thinking has stressed the unique advantages of the organisational features of the industrial districts described in Section 3.2. The efficiency of the local networks has been explained in terms of a combination of competition (stimulating dynamics and innovations), specialisation (social division of labour) and co-operation (minimising uncertainty and opportunism, stimulating exchange of knowledge and information, and lowering transaction costs) between the local actors (Bertini, 1994). They emphasise the fact that the small, vertically disintegrated firms operating in those local production systems could benefit from the unique coexistence of (external) scale economies and flexibility.

Therefore, the Third Italy area was particularly suited to respond to the differentiation of demand (that is, demand for more varied and customised goods, produced in short series) since the 1970s.

Fuà & Zacchia (1983) and Pyke & Sengenberger (1991), among others claimed that this endogenous growth process necessitated several pre-conditions, such as a tradition of small-scale artisanal production, which were typical for the Third Italy area. They have mentioned the particular socio-cultural structure in the Third Italy as one of these, because it constituted a propitious environment for the particular type of industrial development described in the previous section. Harrison (1992) has proposed to link this socio-cultural dimension to relations of trust, or social capital, as described in Section 2: “the industrial district model posits a very strong form of the embedding of economic relations into a deeper social fabric” (p. 479). The distinctive social structure of the Third Italy might have provided a basis on which this form of industrial development emerged, because it not only stimulated interaction and facilitated co-ordination between local actors, but it also enhanced flexibility in many respects (Becattini, 1989). Storper (1997) claimed that the regional level may play an essential part here. As Harrison (1992) puts it, “... it may be that trust, and other forms of social capital, are best developed at the regional level, because this is the level at which regular interactions, one of the conditions for trust-building, can be sustained over time” (p. 501).

The reasons put forward in Section 2.2 may again be applied here to underline the importance of social capital for the industrial performance of the Third Italy in the post-war period. However, we would like to link the notion of social capital more explicitly to the particular form of industrialisation of the Third Italy described in Section 3.2.

First, the extreme division of labor between the many small firms necessitates a culture of trust, which facilitates the smooth exchange of commodities and lowers the costs of the many transactions that take place in the industrial districts (Scott, 1988). This is enhanced by the fact that the network-based mechanisms of co-operation and co-ordination between the local economic actors are based on so-called horizontal relations rather than vertical relations of power and dependency. However, Markusen (1996) remarked that “...critics argue that the power of large corporations to shape Italian industrial districts has been understated” (p. 301).

Secondly, trust among the local actors favours the transmission and exchange of tacit knowledge at the district level, which is essential for small firms to learn and innovate. As “tacit knowledge is collective in nature, and, because it is wedded to its human and social context, it is more territorially-specific” (Harrison, 1992, p. 479). The GREMI-group (Camagni, 1991) introduced the notion of ‘innovative milieu’ in order to explain the clustering of vertically disintegrated firms specialised in a particular techno-industrial field in terms of collective learning

embedded in a regional context. That is, collective learning in the industrial districts is achieved through the intra-regional mobility of human capital (as the main carrier of tacit knowledge), the transfer and feedback of information via dense, informal networks of local actors, and a common local culture of trust based on shared practices and rules.

Thirdly, local relations of trust encourage the co-ordination and co-operation mechanisms that are so vital for the competitiveness of the small firms. Generally speaking, small firms lack the resources to be successful on export markets, to do their own research, to negotiate with large banks for loans at favourable terms etc. The importance of relations of trust here is that they provide them the means to realise this (Dei Ottati, 1995). As Harrison (1992) puts it, “firms are said to co-operate on getting new work into the district, in forming consortia to obtain cheap credit, in jointly purchasing raw materials, in bidding on large projects and in conducting joint research” (p. 478).

Fourthly, local traditions and political institutions contributed to the particular form of industrialisation in the Third Italy, mainly because these regulated potential social conflicts and achieved political and social cohesion (Sabel, 1989). Fuà (1981) and Trigilia (1986) talked about the existence of political sub-cultures that cut across social cleavages. The local sub-cultures are deeply rooted into a common culture and closely linked with a tradition of co-operation in these areas. This boosted, in particular, the flexibility of the labour market. The dynamic functioning of the industrial districts demanded from labour a flexible attitude, which was enhanced in the Third Italy area by a lack of labour militance, limited class polarisation (high rate of social mobility) and the importance of family business (close ties between family members stimulated flexibility). The high flux of labour market activity could be maintained without major frictions. This is because the social networks guaranteed a rapid flow of information about new job opportunities, and because a ‘social compromise’ between the local interest groups (government, entrepreneurs, unions) did not impose any rigidity on the flexibility of the work force (Trigilia, 1994).

4. The importance of social capital for the industrial rise of the Third Italy

In the previous section, we described the particular nature of industrial development in the Third Italy area, and we made explicit the role social capital may have played in the development of this

form of industrialisation. The second part of this paper makes an attempt to assess empirically the importance of social capital for the rise of this type of industrial development in the Third Italy. To begin with, we explain in Section 4.1 how we measured social capital. In Section 4.2, a simple discriminant technique is applied to test the proposition stressed by the literature that the Third Italy area could be considered a unique area as compared to other regions with respect to particular socio-cultural characteristics. In Section 4.3, we make use of a multivariate regression technique to determine empirically the degree to which a local culture of trust actually contributed to the growth of this particular type of industrial development in this part of Italy during the post-war period.

4.1 How to measure social capital?

To begin with, we explain how we measured social capital. As set out in the introductory part, it is remarkable how few studies have been carried out to provide empirical support for theoretical statements concerning the importance of social capital for regional development. We present and discuss the variables we used in our empirical research. By doing so, we also devote attention to other empirical studies that have made an attempt to measure social capital.

As noticed in Section 2.1, it has been difficult to determine what is actually meant by the notion of social capital. This is even more so when measuring the stock of social capital (Solow, 1995). This is not to say that no efforts have been made in this respect. Knack & Keefer (1997) among others (Nyfer, 1997) did a study on trust and civic norms with the assistance of the World Values Surveys. Here, 'trust' was rather arbitrarily measured by "the percentage of respondents in each nation replying "most people can be trusted"" (p. 1256), which was supposed to indicate the "... expectations of whether others will act opportunistically at one's expense" (p. 1258). 'Norms of civic co-operation' were measured by assessing the trustworthiness of respondents. They were asked whether it is justified: "to claim government benefits which you are not entitled to, to avoid a fare on public transport, to cheat on taxes if you have the chance, to keep the money you have found, and to fail to report damage you've done accidentally to a parked vehicle" (p. 1256). Putnam (1993) and Helliwell & Putnam (1995) measured a composite index of 'civic community', which consisted of three dimensions. The first one is 'civic engagement', which is associated with newspaper readership and turnout in referenda. The second refers to horizontal association or group membership, which is gauged by the density of sports and cultural associations. The third one is based on the incidence of preference voting at national elections which is regarded as "a surrogate for clientelism and thus for noncivic community" (Tarrow,

1996, p. 391).

We have selected three variables to assess ‘culture of trust’, for which reliable data were available by region in Italy in the early 1950s. The first indicator included in our analysis concerns the number of economic co-operative organisations (consumer-oriented as well as producer-based). This type of economic organisation has been regarded as a form of ‘organised but voluntary social solidarity’ (Putnam 1993, p. 140). In this way, the intensity of co-operative associations reflects a culture of co-operation, in which the members have shown a willingness to collaborate in order to achieve mutually beneficial ends (Fornasari & Zamagni, forthcoming). Harrison (1992) has described the importance of co-operative movements in Italian regions, which provided all kinds of services to its members, such as financing, technical assistance, training and marketing. In 1951, there was a total number of 14,331 co-operatives in Italy which were divided among the following categories: consumers-oriented (20%), producer & labour-oriented (32%), agriculture (13%), construction (25%), transport (1%), fishery (1%) and others (7%) (SVIMEZ, 1961). Another data source (Manufacturing and Trade Census, 1951) registered a total amount of 10,782 co-operatives in 1951 that employed about 138,000 people (excluding the agricultural sector). In our analysis, we took the variable ECONCOOP as a proxy for the co-operative form of economic organisation, which is measured as the share in the total number of economic co-operatives by region in 1951.

The second measure of ‘culture of trust’ is the incidence of preferential votes during national elections. We follow the interpretation of Putnam (1993), among others (Katz & Bardi, 1980) who claim that “preference voting can be taken as an indicator for the absence of civic community” (p. 94). According to Putnam, “... the preference vote is used in Italy to assure individual benefits, not to anchor a policy preference” (Tarrow, 1996, p. 391). Therefore, it is likely to reflect vertical bonds of patronage and clientelism. However, it should be taken into consideration that this indicator may be criticised. Tarrow (1996) states that “... preference voting can be used as a measure of clientelism, but this does not help explain how it relates to the civic virtues that Putnam elucidates theoretically.... One might argue intuitively, contra Putnam, that since preference voting is based on knowing the individual candidates, it is a positive element in civic involvement.... It is what usually accompanies preference voting in southern Italy – corruption and clientelism – that makes it inimical to what Putnam sees in the civic community” (p. 391). Therefore, we follow the suggestion made by Tarrow that this indicator should only be used as a negative indicator of civic virtue. We measure the variable PREFVOTE as the number of preferential votes per 100 voters during the 1953 national elections.

The third and last measure of ‘culture of trust’ we use is the density of associations that may include religious organisations, cultural activities, sport clubs, etc. Following Putnam (1993), this indicator is used as a proxy for civic sociability, because the intensity of associations may reflect a high rate of social interaction that builds trust and co-operative habits between its members. According to Knack & Keefer (1997), “the underlying idea is that such relationships either break down information asymmetries or create a pattern of repeated interactions that allow self-enforcing agreements to be reached; people who belong to such networks “trust” others who belong to them, and are more likely to exhibit civic behavior” (p. 1278). The variable ASSOCIAT measures the regional share (in %) of recreational and cultural associations (such as soccer clubs, choral society, etc.) in 1982 though founded before 1960. These data have been taken from the Associational Census of 1982 (Mortara, 1985). A drawback of this measure is the fact that it excludes associations that existed in the 1950s but which had disappeared in 1982. Nevertheless, an advantage of this might be that we only account for the more durable and long-lasting associations in our analysis.

4.2 Is the Third Italy an unique area with respect to social capital?

In the Sections 3.1 and 3.2, we examined whether the Third Italy area was a unique area concerning its industrial growth rate and its type of industrial development in the post-war period. Our main conclusion was that it was to a considerable degree. In Section 3.3, we made clear that according to a large body of literature, a culture of trust could largely be held responsible for the industrial rise of the Third Italy. Therefore, we now examine whether the Third Italy area is indeed a unique area during its initial stage of development (that is, in the early 1950s) with respect to its score on the three social capital indicators described in Section 4.1. Then, in Section 4.3, we determine empirically the degree to which a culture of trust has actually contributed to the growth of this particular type of industrial development in this part of Italy during the post-war period.

We have taken the 20 standard administrative regions of Italy. However, we carried out the final analysis only with 17 regions because of several reasons. First, we needed to aggregate the regions of Piedmont and Aosta because of the small size of the latter. Moreover, we have taken together the regions of Veneto and Friuli-Venezia-Giulia and the regions of Abruzzi and Molise because of missing values. It goes without saying that we would have preferred to measure the impact of social capital on the appropriate spatial level, that is, on the more disaggregated level of industrial districts. However, lack of appropriate data at this level made this impossible.

Nevertheless, as Section 3.2 demonstrated, a considerable number of industrial districts could be observed in a limited number of administrative regions (mainly in the Third Italy area) which might imply that the impact of social capital extends well beyond the level of the industrial district. This might indicate that a culture of trust operates on a more aggregated spatial level, which is suggested by the literature as well.

The statistical method we use is discriminant analysis. Our objective is to examine whether it makes sense to split Italy into three areas (that is, the First, Second Italy and Third Italy) with respect to the regional scores on the three indicators of culture of trust. This classification technique allows us to identify linear combinations of the three variables that best characterise the differences among the groups. We included all three variables, ignoring whether they do or do not aid to discriminate between the three groups. Moreover, we explored which of the variables were most influential in discriminating among these groups. The results are summarised in Table 3.

Table 3. Group statistics of the discriminant analysis

REGION		ECONCOOP	PREFVOTE	ASSOCIAT
First Italy	Mean	2.597	20.449	3.632
	Std. Deviation	1.026	2.877	2.502
	Valid N listwise	3	3	3
Third Italy	Mean	3.116	24.199	2.415
	Std. Deviation	2.266	3.620	0.438
	Valid N listwise	6	6	6
Second Italy	Mean	2.647	42.382	1.849
	Std. Deviation	1.989	6.164	2.619
	Valid N listwise	8	8	8
Total	Mean	2.803	32.094	2.363
	Std. Deviation	1.877	11.112	2.068
	Valid N listwise	17	17	17

Sources: SVIMEZ, 1961, table 382; Scaramozzino, 1979, elaborations on table 1.2; *Annuario Statistiche Italiano*, 1954, table 137; Galli, 1968, tables 3 and 7; Mortara, 1985, table 6.

As shown in Table 3, there are, as expected, differences between the Three Italy's. However, the assumption of equal variances is hardly met: the standard deviations vary greatly across the groups for all three variables. Nevertheless, it is justifiable to conclude that, on average, the Third Italy has more ECONCOOP (3.1 versus 2.6 and 2.6), the Second Italy has more PREFVOTE (42.4 versus 20.4 and 24.2), and the First Italy has more ASSOCIAT (3.6 versus 2.4 and 1.8). Our analysis shows highly significant differences between the three groups. A chi-square of

25,931 confirms that the means of the two canonical variables are significantly different between the three groups. In fact, only 14 per cent (Wilks' lambda of 0.136) of the variance is not explained by the group differences. The first canonical discriminant function accounts for 97.5 per cent of the total dispersion, to which the variable PREFVOTE shows the greatest relative contribution. However, after removing the first canonical variable (function 1), the scores of Wilks' lambda and the associated significance level indicate that the centroids of functions 1 and 2 do not differ significantly across the three groups. Finally, we measured the degree of success of the classification. In our analysis, 88.2 per cent of the cases (15 out of the 17 regions) were assigned to their correct group. This applies to the 6 regions of the Third Italy and the 8 regions in the Second Italy. However, two out of three regions in the First Italy (that is, the regions of Piedmonte and Lombardy) were wrongly classified in the Third Italy group.

4.3 The importance of social capital for the industrial rise of the Third Italy

The outcomes of the discriminant analysis in the previous section led to the conclusion that the Third Italy is quite a distinct area with respect to culture of trust. As expected, it differs significantly from the Second Italy. However, we had to reject the hypothesis that the Third Italy is a unique area, because the regions of the Third Italy shared their socio-cultural features with two other regions of the First Italy.

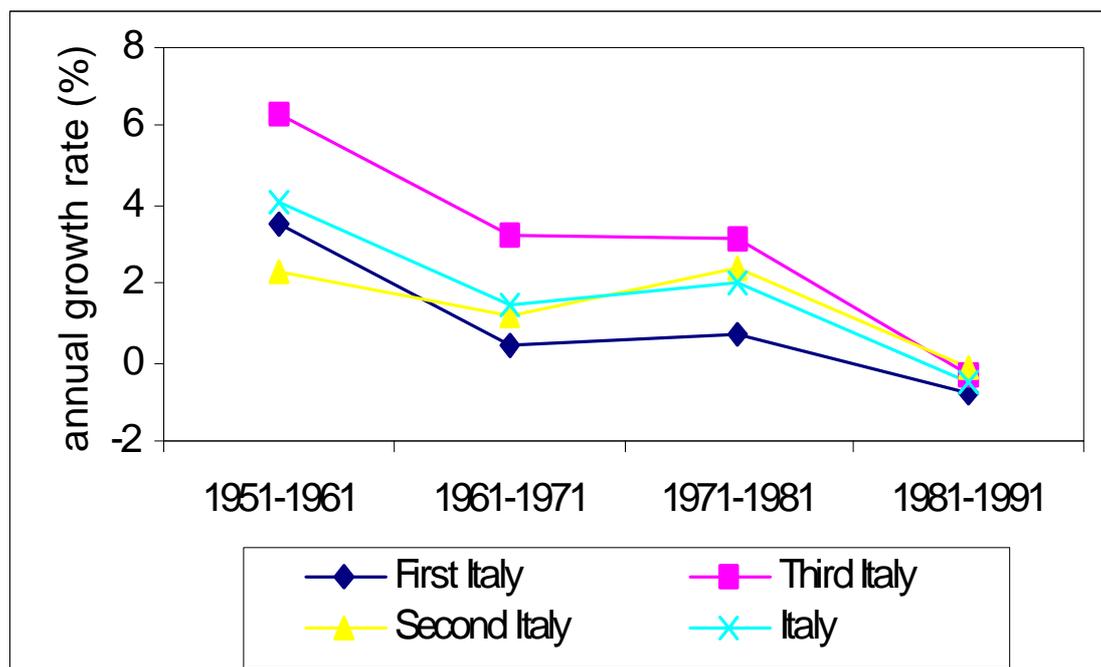
In this section, we make an attempt to assess empirically the impact of culture of trust (measured in the early 1950s) on the growth of the particular form of industrialisation (as described in Section 3.2) by region in Italy during the post-war period. In other words, we examine the extent to which this form of industrial development has strongly been rooted in a local culture of trust. By doing so, we examine whether social capital has indeed constituted a basis for the industrial rise of the Third Italy during its initial stage of development, and to what extent a culture of trust should be regarded as sufficient in this respect. In other words, whereas other empirical studies (Putnam, 1993; Helliwell & Putnam, 1995) have associated social capital with economic development in general, we have explicitly linked this to the particular type of industrial development described above in which it is expected to play a crucial role. We make use of a simple multiple linear regression technique in order to determine how well the three independent variables ECONCOOP, PREFVOTE and ASSOCIAT explain cross-regional variation in industrial growth in Italy over a 30-year period (1951-1981).

First, we explain how we measure the rise of the particular form of industrialisation that has been associated with the Third Italy area. We decided to take as our dependent variable

INDGROW the annual growth rate in employment in firms with less than 500 people employed in traditional-artisanal sectors by region in Italy during the period 1951-1981. We have presented this variable in Figure 3. By doing so, we have covered two of the three main features of this type of industrial development described in Section 3.2. The typical small-scale industrialisation has been accounted for by excluding those firms that employ more than 500 people, whereas the craft-based nature of this type of industrialisation has been grasped by selecting those manufacturing industries that could be considered as traditional and artisanal. As explained in Section 3.2, we included in our analysis the following industries: textiles, footwear and clothing, leather goods, wood and furniture, non-metallic mineral products (including ceramics, marble, jewels) and metallic engineering.

However, a shortcoming of this indicator (due to a lack of available data) is that it does not account for the most essential characteristic of industrial districts described in Section 3.2, that is, the organisational dimension. In fact, our indicator ignores the linkages that may have developed between the small and medium-sized firms involved. It is, therefore, impossible to separate the small firms that operate independently (which we would like to exclude from our analysis) from the small firms that are part of a dynamic network (see also Brusco & Paba, 1997). Moreover, another drawback of this indicator is that we measure growth in employment rather than growth in per capita income. We would have preferred this last indicator because, among other reasons, it would have allowed us to compare our empirical results with those of other studies on this subject (e.g. Putnam, 1993). However, as explained before, our main objective is to link social capital to the particular form of industrialisation in the Third Italy rather than to economic development in general. This was only possible when using the employment figures provided by the Manufacturing Census of Italy. In fact, this source enabled us to account for the two features of this type of industrial development described above.

Figure 3. The annual growth rate in employment in small and medium-sized firms (with less than 500 workers) in selected industries by region in Italy for different periods



Sources: see Figure 1

As in Section 4.2, we measure a culture of trust in the early 1950s in order to explain the cross-regional variation in growth of employment in small and medium-sized firms in traditional-artisanal sectors in Italy during the period 1951-1981. By doing so, we assume that the variables of culture of trust are rather stable over this period. This is also confirmed in our analysis. Another matter is that causality could go in both directions for industrial growth and culture of trust. That is, culture of trust could largely be a product rather than a cause of industrial growth. However, our analysis showed that industrial growth followed rather than led levels of trust. The three variables correlate as expected, that is, there is a positive correlation between ECONCOOP and ASSOCIAT (0.65) and a negative correlation of PREFVOTE with ECONCOOP (-0.23) and ASSOCIAT (-0.39). However, the correlations are not significant, except for the correlation between the variables ECONCOOP and ASSOCIAT.

The outcomes of the multiple regression technique are summarised in Table 4. Broadly speaking, the variables of culture of trust have no significant relationship to economic performance on the regional level as far the Third Italy-type of industrial development is concerned during the period 1951-1981. In other words, culture seems to provide a poor explanation for why some regions in Italy (including the Third Italy area), contrary to other regions, experienced the particular type of industrial development described in Section 3.2.

With respect to equation 1 (the Y-variable concerns the Third Italy-type of industrial development), it appears that the coefficients of the variables ECONCOOP (positive) and PREFVOTE (negative) have the right sign, although they are insignificant. The negative coefficient of ASSOCIAT is, however, not consistent with expectation. On the contrary, as associational activity increases in a region, its industrial performance tends to decrease. This latter result shows that associational activity is not related to economic performance, in contrast to the findings of Putnam. Moreover, the whole model has a poor fit.

Table 4. Social capital and industrial growth by region in Italy, 1951-1981

Equation	1	2	3	4	5	6	7
Constant	3.629E-16 (0.217)	-5.86E-17 (0.212)	-8.68E-17 (0.230)	-1.31E-16 (0.215)	5.017E-16 (0.186)	4.821E-16 (0.181)	4.474E-16 (0.183)
ECONCOOP	0.516 (0.295)	0.745* (0.288)	0.408 (0.243)	0.733* (0.293)	0.229 (0.277)	0.104 (0.196)	
PREFVOTE	-0.498 (0.242)	-0.287 (0.237)	-0.146 (0.243)		-0.767* (0.204)	-0.746* (0.196)	-0.783* (0.200)
ASSOCIAT	-0.517 (0.311)	-0.566 (0.304)		-0.447 (0.293)	-0.183 (0.279)		-2.47E-02 (0.200)
Adj. R square	.20	.24	.10	.21	.52	.54*	.53*
SEE	0.89	0.87	0.95	0.89	0.70	0.68	0.69

Standard errors are in parentheses.

Sample size is 17 in equations 1, 2, 3 and 4. Sample size is 14 in equations 5, 6 and 7.

Asteriks* denote significance at the ten percent level

SEE= Standard Error of the Estimate

Sources: see Figure 1 and Table 3

A plausible reason for why our results deviate from the Putnam analysis discussed in Section 2.2 is that we measure the dependent variable differently. As noticed before, we associate social capital with a particular type of industrial development in which it is expected to play a crucial role (that is, small-scale industry in traditional sectors), rather than with economic development in general. We therefore carried out another regression with regional growth of employment in the whole manufacturing sector as the dependent variable (INDGROW*). The outcomes of this analysis are given in the equations 2, 3 and 4. As shown in Table 4, this additional analysis leads almost to the same conclusions: the variables PREFVOTE and ASSOCIAT, once again, do not have a significant impact on annual industrial growth by region in Italy in the period 1951-1981.

Moreover, the coefficient of variable ASSOCIAT is again negative. However, contrary to equation 1, the variable ECONCOOP now exhibits a large and significant impact on regional industrial growth. That is, the coefficients for ECONCOOP in equations 2 and 4 indicate that a one-percentage-point rise in that variable is associated with an increase in growth of three-fourths of a percentage point.

The main reason behind the poor fit of the models is that the observed value of INDGROW in the First Italy area (especially the regions of Lombardy and Liguria) is much lower than might be expected from its scores on the social capital variables PREFVOTE, ASSOCIAT and ECONCOOP. To test this statement, we did another three regressions on the Y-variable INDGROW (equations 5, 6 and 7), in which we left out the three regions of the First Italy. In the equations 6 and 7 (with $n=14$), there is now indeed a good fit of the overall model (significance $F < 0.001$), although the coefficient of the ASSOCIAT remains negative. The variable PREFVOTE has now a significant relationship to industrial growth in the period 1951-1981. In fact, the coefficients for PREFVOTE demonstrate that a four-percentage-point rise of PREFVOTE is associated with an increase in INDGROW of about three-percentage-points.

The good fit of the overall model shown in the equations 6 and 7 gives evidence of why the Third Italy area, which was well-endowed with a culture of trust, did much better than the South of Italy to develop this particular type of industrial development. The Third Italy regions of Trentino and Veneto & Friuli-Venezia-Giulia are, however, exceptional cases, because they demonstrated a rather poor score on INDGROW while performing well on the social capital variables. Although we have to be cautious not to jump into hasty conclusions, the socio-cultural structure of the South of Italy in the early 1950s did not provide a stimulus for this particular form of industrialisation. This may well explain why small and medium-sized firms in the Second Italy often operate quite independently, whereas small and medium-sized firms in the Third Italy area co-operate and form dynamic networks, as suggested by Fukuyama (1995). However, the regions of Abruzzi-Molise and Puglia take a rather exceptional position in the South of Italy, because they show a satisfactory score on INDGROW although doing poorly on the social capital variables.

4.4 Conclusions

This section made some tentative efforts to measure a 'culture of trust' that could be explicitly linked to the form of industrialisation that has been associated with the Third Italy by a large body of literature. For this purpose, three variables have been selected, that is, the significance of

economic co-operatives as a form of voluntary social solidarity, the incidence of preferential votes as a negative proxy for civic virtue, and the density of associations as a proxy for civic sociability. The discriminant analysis showed that, as suggested by the literature, the Third Italy area was indeed a distinct area with respect to culture of trust in the early 1950s. It gave not only evidence of a homogenous area with respect to social capital, it also differed significantly from the Second Italy in this respect. However, we had to reject the proposition that the Third Italy was a unique area, because some regions of the First Italy (Piedmonte and Lombardy) appeared to share the same socio-cultural features (such as a low incidence of preferential voting).

The outcome of the multiple regression analysis showed that the culture of trust variables had no significant impact on regional growth in small-scale, traditional-artisanal industries in Italy during the period 1951-1981. Moreover, associational activity is unrelated to economic performance, to say the least. However, when regional growth of the whole manufacturing sector is taken as the dependent variable, the variable ECONCOOP, in some cases, exhibits a large and significant impact on regional industrial growth. Nevertheless, the whole model keeps on demonstrating a poor fit. This, however, changes when we did another regression, leaving out the regions of the First Italy. This resulted in a good fit of the models, whereas the variable PREFVOTE turned into a significant relationship to regional industrial growth.

5. Conclusion

This paper made an attempt to link empirically the notion of social capital to the rise of the particular form of industrialisation in the Third Italy, characterised by spatially agglomerated networks of flexible, small and medium-sized firms operating in craft-based industries. It has been mentioned by a large body of literature that the particular socio-cultural structure in the Third Italy (in terms of common values and norms, etc.) provided a basis on which this particular form of industrial development could emerge. This socio-cultural dimension has been linked to relations of trust, which not only stimulate interaction and co-ordination between the local actors, but also enhance the flexibility of the local production systems in many respects. However, there have been few studies that have actually provided empirical support for these theoretical statements.

We applied several statistical techniques in order to determine whether a local culture of trust could be held responsible for this particular form of industrial development in the Third Italy

area. The main results of the analysis point out that the Third Italy area was a distinct but not a unique area with respect to this social-cultural dimension in the early 1950s. The three culture of trust variables also showed no significant impact on regional growth in small-scale, traditional-artisanal industries in Italy during the period 1951-1981. However, when leaving out the regions of the First Italy, a local culture of co-operation and trust turned into a significant relationship to industrial growth on the regional level in Italy. This outcome suggests that a local culture of trust may have been responsible for this particular type of industrial development in the Third Italy area, in contrast to the South of Italy. The Third Italy area was well-endowed with a favourable socio-cultural structure, which may have constituted a favourable basis for the development of the particular form of industrialisation in the 1950s. By contrast, the backward South of Italy mainly lacked such a local culture of co-operation and trust. The First Italy area is a particular case. Generally speaking, the First Italy was a likely candidate to develop this type of industrial development when its high score on this socio-cultural dimension is considered. However, other findings suggest that its poor economic performance may be attributed to the fact that it lacked other preconditions such as a tradition of small-scale, traditional industry and a supply of flexible, low-cost labour.

There is still much research to be done before we can come to any final conclusions with respect to this topic. There are at least three fields which deserve more particular attention. First of all, it has already been mentioned in the paper that is hard to develop indicators that measure the impact of social capital. We have made use of three variables, which, however, may be criticised for several reasons. Secondly, a shortcoming of our dependent variable is that it does not account for the organisational dimension of the Third Italy type of industrial development. Moreover, we need data on the more disaggregated level of industrial districts in order to assess the impact of social capital more accurately. Nevertheless, we believe our dependent variable gave us the possibility to link explicitly social capital to economic performance, because it accounted for the Third Italy type of industrialisation, in which this socio-cultural factor is believed to play a crucial role (contrary to studies like Helliwell & Putnam (1995)). Moreover, it is more useful to analyse the economic impact of social capital on the regional rather than the national level (as Knack & Keefer (1997)), because it is mainly at this local level that trust is built (Storper, 1997). Thirdly, we have to be cautious not to treat social capital as a durable resource that may not be subject to major change in the course of time. In fact, some have argued that the spatial structure of social capital in Italy sketched above is now under a process of change (Trigilia, 1995; Tarrow, 1996).

6. Bibliography

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