



Università degli Studi di Modena e Reggio Emilia
Dipartimento di Economia Politica



Materiali di discussione

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Spatial Mismatch and Mobility Involvements: a Common Approach for the Urban Sprawl Parma-Bologna

by

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Luglio 2006

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***SPATIAL MISMATCH AND MOBILITY INVOLVEMENTS: A
COMMON APPROACH FOR THE URBAN SPRAWL
PARMA-BOLOGNA***

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ABSTRACT

An economic growth which is wide-area scattered is one of the most important indicator of social well-being and is such a strong factor that can induce long-range demographic dynamics. Incoming migration fluxes are scattered across the national territory following patterns that appear mostly relational rather than economically driven. The resulting effect can be the well-known problem of Spatial Mismatch, SM. The institutionalist approaches permits to use different scaled units of analysis, with different levels of integration but coexistent under the very same historical-social pattern-determining context. This work will try to explain the relationship between SM and the more general Transaction Costs. With this hypothesis it will be possible to read from a (neo)institutionalist perspective the whole, empirical and theoretical, body of Spatial Mismatch.

Trough the introduction of the temporal perspective the present work propose a theoretical framework that shows that the increasing degree of spatial mismatch discussed in the case study has appeared only when the redistributive action so important for the initial development, and operated mainly trough the increasing of social capital stock, has declined. Therefore upgrade policies of public goods are considered constantly needed in order to promote growth itself.

1. Introduction

An economic growth which is wide-area scattered is one of the most important indicator of social well-being and is such a strong factor that can induce long-range demographic dynamics. Migratory dynamics, while being long range attracted by economic grow of a sys-

tem, are scattered through the system by relational effects, which concurs in the creation of ethnic clusters, historically located in urban centres [1]. These areas of demographic homogeneity are co-created/strengthened by a physical distribution of unskilled job opportunities in the system that sees an increase in the suburbs to the detriment of opportunities located within historical urban centres [2]. The resulting effect is the well-known problem of Spatial Mismatch, SM, [3]. For the single ethnic cluster welfare user this turns into higher travel costs and fewer job opportunities: this subject has been dealt with by many authors through both theoretical models and prominent empiric researches enhancing the importance of commuting costs – both monetary and in time – and less access to information as contingent representations of spatial mismatch. Recognizing the strict dependence existing between mobility issues and cluster SMs implies a definition of what kind of good “mobility” has to be considered. In this work, mobility, is intended as a *common* good (resource) created or destroyed by the users’ interaction. It is the main field of research, to provide meaningful models and a theoretical framework for spatial mismatch problem-solving policies. In a common perspective of mobility, spatial mismatches are not barriers to the access of opportunities, typical of disadvantaged groups, such as ethnic clusters or afro-americans confined to united states urban conglomerations, but influence all common users, through, for example, the generators of congestive dynamics, or public transport inefficiencies, or localization of economic activities. Therefore upgrade policies of public goods are considered constantly needed in order to promote growth itself. Literature confirms that an important effect of investments for maintenance of travel infrastructures relating to the increase of the benefits of public capital stock [4]. This work will follow this perspective, extending it to embrace the more general one of “social capital” [5] According to this perspective, the spatial mismatch phenomenon not just deals with space mismatch, but mainly time mismatch regarding job (social) opportunities: different modal mobility choices create different spatial mismatch values because they have different travel times. Without a deeper effort of a comprehensive theoretical definition, both the con-

cepts of “distance” and “inequality” – evoked in most empirical literature – can induce in critical misunderstandings.

The work is three-parts structured: the first will briefly summarize the SM literature, underling the important theoretical vs. empirical dichotomy. The second part will introduce a simple theoretical model capable to provide – even under perfect competition conditions – a structural explanation of spatial mismatches. In particular we will sustain the fundamental dualism between SM and the more general one of Transaction Cost, TC. With this hypothesis will be possible to read from a (neo)institutionalist perspective the whole, empirical and theoretical, body of Spatial Mismatch: just as like as firms as institutions capable to solve individual negotiation mismatches, other institutions and/or relation networks can act on rules and infrastructures enlarging or reducing social mismatches. The set of rules and infrastructures will be treated as Social Capital, using the definition of Ostrom which will be discussed in the framework proposed. The third part of the work will summarize the evolution pattern of the greatest part of the Italian industrial complex –the Small-Medium Enterprises, SMEs, of Emilia Romagna, with the case study focused on the Provinces of Modena and Reggio Emilia, to the nowadays transitional phases trough scale-increasing induced assets.

2. A brief analysis of the literature

The Spatial Mismatch (SM) hypothesis, originally introduced by Kain in 1964, states that “*Serious limitations on black residential choice, combined with the steady dispersal of jobs from central cities, are responsible for the low rates of employment and low earnings of Afro-American workers*” [6]. The argument has been widely explored through an array of empirical contributions, in which the SM hypothesis has been considered with two different degrees of

constraint, strong and weak¹, both on the effects of SM in the labour market and as a determinant of ethnic clusters [1].

Spatial Mismatch in its original formulation finds a causality between household segregation and cluster mean wages; while this result is definitely true in the United States of 1970-1980, it is a recent conclusion that its effects emerge even in the absence of normative restrictions on immigrants' choices. Incoming migration fluxes are scattered across the national territory following patterns that appear mostly relational rather than economically driven [1]. If, on the one hand, relational aspects seem to reduce the importance of welfare policies in the mitigation of SM's effects, on the other hand this very factor underlines the importance of acting directly on the structural generators – access to information, gender, transport infrastructures, physical distance, etc. – through which Spatial Mismatch develops negative effects on the labour market: discrimination, segmentation and exclusion. The very wide-ranging literature on the SM hypothesis provides empirical evidence of its two impact vectors over the labour market; the first is the greater difficulty cluster citizens have in finding suburban jobs² [8], because of worse access to information. The second impact vector is represented by the longer commuting times required for centre/suburban journeys, compared to centre/centre or suburban/outland journeys [9].

The limits of SM are both theoretical and methodological: the incomplete theoretical conceptualization leads to ambiguity with regard to the effects of SM on the labour market [10]; moreover, the uncertain degree of dependency of SM on underlying urban structures [11] weakens the strength of empirical experience in providing support for city management³. This same shifting of job opportunities towards the suburbs cannot be taken as an exogenous factor and it is trivial to imagine examples in which the effects of suburbanisation on the ethnic clus-

¹ The strong formulation assumes that the limitations on residential choice and the steady dispersal of central jobs are the only determinants of the SM phenomenon, while the weak one considers them as two of the many factors that can induce SM

² The impact increases in direct proportion to the cluster citizen's dependence on word of mouth in discovering opportunities for suburban jobs. [7]

³ Considering the aging of the literature on SM, true complete works of conceptualisation have only appeared in the last decade, See [12], [13].

ters are positive or negative⁴. This is one of the main implications of the case study that will be discussed in the final part of this paper.

Discussing Spatial Mismatch issues means necessarily trying to understand whether it is the economic development itself of the territory under consideration – big heavy-industry belts around cities that attract unskilled workers, segregated in urban centres – which should be held accountable for the formation of an ethnic cluster disadvantaged because it is far from its workplace. Some theoretical contributions answer in the negative to this very fundamental question, claiming the predominance of relational reasons in the formation of an ethnic cluster over welfare or economic ones [1, 14]; on the other hand the emergence of mismatches can be clearly seen in post-industrial cities, i.e. in places without “rust-belts” declining over time, raising issues of SM [15, 16]. From an analysis of the literature it is clear that the few theoretical models of Spatial Mismatch appear to be a long way, in approach and conclusions, from empirical-data-driven analysis. As an example, while Sultana [16] underlines the importance of relational goods in a real context, the theoretical approaches are based on a model of general equilibrium where, by definition, the mainly non-linear effects of individual relationships are excluded. Generally speaking, models proposed in the literature focus on limits to employment, barriers, or information failures that would emerge in the standard model; briefly, the Spatial Mismatch hypothesis is typically treated as an imperfect competition? hypothesis and measured with the following reduction in wellbeing.

The imprecision in the theoretical modelling recurs in the empirical reading of the problem, especially during attempts to find the behavioural generator, or the tendency to focus only on the boundaries imposed on choices, losing sight of the networked interactions that actually produce Spatial Mismatches.

The link between the structural generators of mismatches and their contingent expressions is without a doubt to be found in the way resources can physically and culturally move out of clusters. It is therefore necessary to consider “mobility” as a resource and discuss its

⁴ Suburbanization of workplaces modifies wages and rents of cluster citizens by altering the urban income of the centre and by means of the rate of land\work and work\capital substitution, See [10].

economic nature: if the SM phenomenon exists then the mobility of resources is low. The hypothesis of this work is that mobility has exactly the same nature as a common good: a good made up of infrastructures, juridical assets and a community of users that socially produce the resource which they individually consume [17]. Since the resource is socially produced, the misconstruction of the common good of mobility from the SM perspective is evidence of a structural process, at the origin of which it must be possible to trace institutional action on the land asset, in both its successes and its failures. The Spatial Mismatch hypothesis, even with its limits and misunderstandings, certainly has considerable influence on policy makers, and many policies aimed at mitigating disadvantages of suburban workplaces for central cluster citizens are based on its assumptions. Examples in this field are the many Local Public Transport (LPT) upgrade programmes, aimed at improving access to the service. Evaluating mobility policies in terms of the SM effects that they produce or reduce gives us the opportunity to evaluate mobility as a whole, looking beyond the efficiency of the single policy and assessing labour market access opportunities for a whole ethnic cluster. Since each user gives a very high economic value to commuting time [18], everyone will make choices in their mode of public transport that, *ceteris paribus*, will guarantee lower journey times [19]. This creates a substitution effect – empirically measurable – between LPT and other transport alternatives, in which the economic space occupied by LPT is squeezed as the willingness to pay grows, while the number of cars is unaffected [20]. In Italy the Local Public Transport service, LPT, has been targeted by a decade of reforms, aiming at halting its structural loss of competitiveness through regulation for competition which has been as long drawn out as its results have been unclear – it appears to have achieved little, if anything [21]. The hypothesis followed in this paper is that it is these, the infrastructural aspects of mobility, which make the regulator powerless and render the “efforts” of both the market and regulators in vain⁵.

With an unclear nexus between land use policies, the construction of the public good “mobility”, the choice of mode of transport in consumption of “mobility” and therefore the pro-

⁵ This approach is mainly absent in Italian literature on LPT, since reflections are mostly focused on the working of the LPT market, overlooking the structural role of the service and thus the “external effects” of regulation for competition in the system of urban assets as a whole; See [22]; [23] [24]; [25].

duction of SM effects, the risk is the production of more Spatial Mismatches rather than the mitigation of existing ones. This work therefore concentrates on the territory, because this is the only empirical unit of analysis in which the aggregated effects of individual sector policies can be recomposed and their capacity to mitigate or produce mismatches finally understood.

The next section will introduce the theoretical framework needed to demonstrate the role of the institutions in mitigating, creating or eliminating SM effects through territorial planning.

3. The theoretical framework

The starting point of our reflection is a general feature –apparently a paradox – of every “spatial” model: the introduction of the temporal perspective. The introduction of a “distance” parameter brings up the – structural – issue of time and its cost of use for coordination between the different parts of a system. Usually, the costs of coordination between economic units emerge as a result of the social division of labour; these costs can be associated to the “cost of use of the market” [26], or Transaction Cost, TC, in the strictly Coasian definition⁶. Our hypothesis is that the degree of mismatch of a system should be measurable in terms of TCs.

‘The economic system is extremely complicated. You have large firms and small firms, differentiated firms and narrowly specialised firms, vertically integrated firms and single-stage firms; you have in addition non-profit organisations and government entities – and all bound together, all operating to form the total system. But how one part impinges on the others, how they are interrelated, how it actually works – that is *not* what the people study. What is wrong is the failure to look at the system as object of study. ... I think the key to the development of a sensible analysis is the comparison between the additional production resulting from the rearrangement of activities and the cost of the transactions needed to bring the rearrangement about. ... However, the transaction costs depend ... on

⁶ We must emphasise that Coase’s definition of TCs is strictly related to the division of labour [27], [28], [29], contrasting with Williamson’s more widely known definition, [30] which classifies TCs as frictions arising from information asymmetries and strategic interactions of different origins.

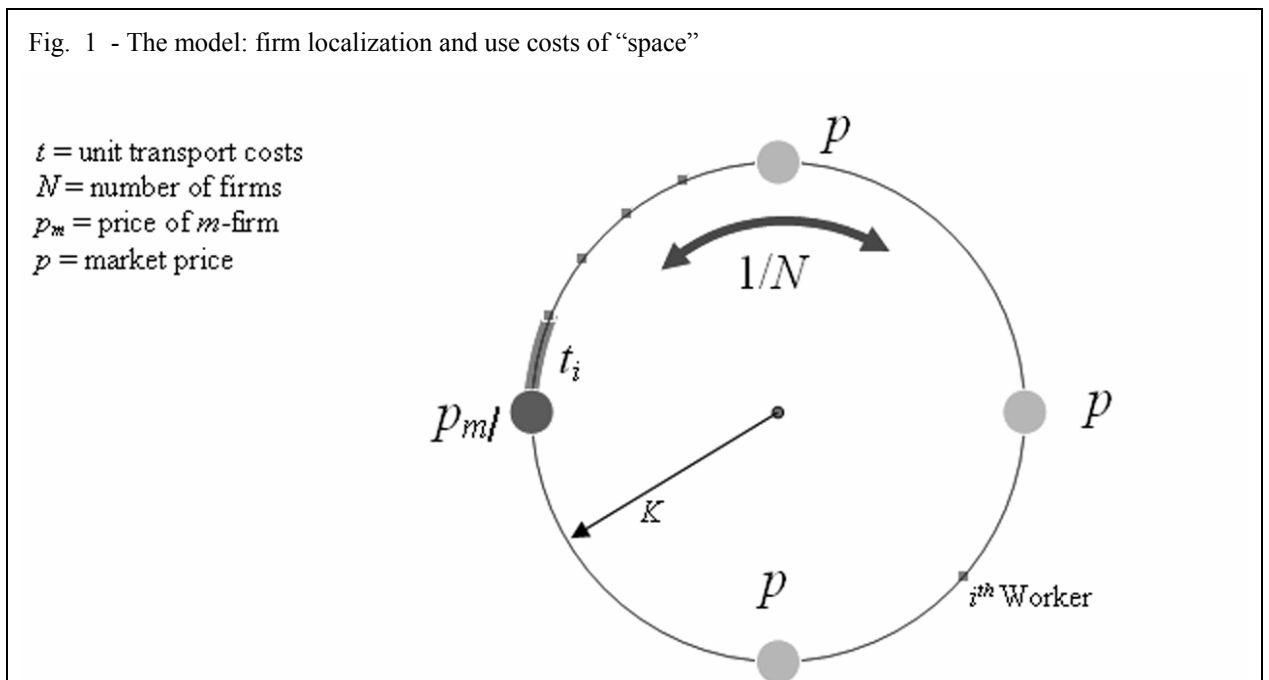
the working of legal system. They also depend on the political system, they depend on the educational system, and they are interrelated with other social systems.’ [29].

In particular, in the coordination of economic units TCs depend on the time taken by factors already used to establish an equilibrium between the internal asset and the modes of exchange with the rest of the system. For this very reason, in spatial models distance is a proxy of time and can therefore provide a schematic representation of TCs, and thus of the degree of mismatch of the system itself. It also has to be stressed that from a theoretical point of view, the relationship between space, distance, time and TCs provides only a partial, approximate interpretation⁷. The ambiguity lies in the economic meaning of the concept of distance: it can mean a space z between two points, which can only be travelled by activating a process that requires a time/cost t , but it could also mean a certain degree of difference between items in a set, in relation to a specified vector of items. As examples we can first imagine two people who live the same distance from a theatre but who may be culturally near to or too far from the activities hosted by the theatre, depending on the degree of accumulation of relevant human capital; or we can easily imagine two points a long way apart in the geographical sense, which however are internet-linked and thus brought very close together because they share exactly the same communication protocol – i.e. http. For these reasons the concept of Spatial Mismatch contains ambiguities that empirical literature picks up and describes, while theoretical studies have difficulty in modelling them.

⁷ From an empirical perspective it is mistaken to imagine the economic activity of transport as a measure of TCs; indeed, considering a spatial model, transport activities are never defined autonomously and are strictly related to the search for an equilibrium of allocation within firms; it is only within this framework that they can be considered as explicit representations of TCs. It is interesting to notice that Coase’s seminal contribution ends with the discussion of “management performance” in the very same terms as a von Thunen spatial representation. [26]

3.1 A simple localization model

To better understand our last statement we will introduce a simple model capable of showing the nexus between Spatial Mismatch and Transaction Costs [31]. The model retains all the hypotheses of perfect competition and focuses on structural relationships and the modifications institutional action may make to them. Agents' behaviour will be important only within the specific system of boundaries produced by the "institutional structure of production" [27]. In other words, assuming an institutionalist perspective, resources, techniques and even tastes are not to be considered "given", but are defined by a given set of rules and opportunities, historically determined. The model may be empirically represented as an island in which communication is possible by means of a circular street, on which a number N (unknown) of firms spontaneously locate (Fig. 1).



Localization Model: hypothesis

- Firms produce the homogenous good B ;
- The N firms will have a market share of $1/N$;
- Firms produce with a constant marginal cost $C' = \alpha w$ and with a fixed cost F ; where α is a technical parameter that represents the labour service needed per unit of good;

- Consumers/workers have transportation costs, *matching*, of t per unit of distance from place of production/workplace; total transportation costs per worker are tz ;
- The market of the good B is perfectly competitive.
- The island's dimension K is given (at the first step)

Localization Model: structure

- Supply side behaviour:
 - Each firm m will fix a price P_m capable of covering its total average costs, knowing that its competitors will fix P in the same way.
- Demand side behaviour:
 - The Consumption/production of incomes has costs rising with the distance from firms (increasing costs related to mobility of goods and labour services)
- The following will have to be determined within the system:
 - The optimal number of firms N^*
 - The price p (single, in the perfect competition hypothesis) of the good B

Localization Model: expectations

Since the consumer/worker is free to move and the firm is free to serve/hire any consumer/worker, then the consumer/worker's attitude toward different firms will be neutral when:

- The division of labour between firms assigns each unit an economic space of $1/N$
- The price p_m for firm m , the price p of the neighbouring firm and the transport costs of the agents for buying/offering labour services – given the conditions of perfect competition who will pay them is irrelevant – will be determined in such a way as to make the following statement true: $p_m + t(0 + z) = p + t(1/N - z)$

For the firm m the demand for services will be: $D_m(p_m, p) = 2z = (p + t/N - p_m)/t$

Therefore, the profits of the firm m are: $\pi_m = (p_m - \alpha w)(p + t/N - p_m)/t - F$.

Firm m will choose a price p_m so to maximize its profits; the other firms act in the same way and so the short-term equilibrium condition can be written as:

$$\begin{cases} \frac{\partial \pi_m}{\partial p_m} = 0 \\ p_m = p \end{cases} \quad \text{by setting this condition we have: } p = \alpha w + t / N$$

Because of freedom of access to the market, in the long term enough firms will enter to cancel out the extra profits, so: $(p - \alpha w) / N - F = 0$. N , which means that the number of firms that the system can sustain is endogenously determined. The optimal number of firms, N^* , will be: $N^* = \sqrt{t/F}$ which, as we can see, derives from the ratio between *matching* costs and structure costs. Finally, substituting p , we have: $t/N^2 - F = 0$ whereby, since N^* is known, we can obtain the long-term equilibrium conditions:

$$p^* = \alpha w + \frac{t}{\sqrt{t/F}}$$

Perfect competition conditions, $p^* = C' = \alpha w$, can thereby be true only if there are no costs of “acquisition of services/production of incomes” ($t=0$), or if there are no fixed costs ($F=0$).

This simple model permits to catch many methodological implications regardless of the level of abstraction of the analysis. The most important one is that perfect competition hypothesis are represented by the circular representation of the model itself, which impose same starting conditions to every point, expressed by the parameter K . Another implication is that if we maintain all the standard hypotheses of perfect competition (information, freedom of access and exit for all agents), given K , social and private costs are the same only in the absence of any costs for the division of labour within the firm and its operating horizon (F) and/or in the absence of costs for the social division of labour (t); the resulting ratio express the coordination and organization capability achieved by the system as a whole⁸.

⁸ If firms were located on a non-space, i.e. a highway, the structure and the representations of the model would have been different: there would be the conditions for the presence of local monopolies. In other terms only the firms would be economic *loci* for consumers. In the field of industrial economics *all* of these models are usually discussed as imperfect competition economics, because of the difference be-

Another important implication of the model, which positively differentiates it from general equilibrium models, is that the number of firms is not given, but arises from the optimal ratio between firms' internal division of labour and the social division of labour between firms. The outcome is that the degree of competition cannot be measured by counting the number of firms in the market – which depends on the distance/structure ratio – but by analyzing the reasons for the mismatch in coordination between different parts of the same system; for example: gender discrimination, information asymmetries, cultural disparities, and difficulty in reproducing competences. According to Sen [7], efficiency must logically be considered as the outcome of equity, and never the opposite.

In fact, if we consider the three variables that determine the economic mismatch as a specific cost of the social division of labour; t , z and F – which in the model give the degree of spatial mismatch – we can extend their meaning so to include the social mismatch. For this purpose, we will use the nomenclature proposed by Sen: t as a proxy of the functioning cost, the social “distance” z as the inversely proportional to the supply of capabilities, and the costs of the private sector F as the necessary cost of agency activities. Referring to the scheme in *Fig. 1*, we can imagine the many different points i as different levels of well-being reached by the different i -workers; these points can be achieved with weight/difficulty t_i and in inverse proportion to different z_i capabilities: a point can be “near” the benefits of social division of labour – high level of well-being – both due to low functioning costs (high mobility, freedom of access, unbiased information), and because of the capability/possibility/freedom to reach it – high capability/low level of z .

From the empirical literature we can suppose that both t_i and z_i are functions of an S vector of focal (structural) variables; for example $S_i = (G_i, L_i, C_i, I_i, D_i)$, where:

- G = Gender
- L = Level of education
- C = Competence

tween their results and those produced by the standard competition model. However, an economic model can only be correctly classified in relation to the system of hypothesis, and not by its conclusions.

- I = Information available
- D = Distance from households – localization of activities

Social mismatch costs will then be given by: $\sum_i t_i(S_i) \cdot z_i(S_i) - \sum_n F_n(S_w)$. It is important to notice that participation in production processes organized and managed by the division of labour within a firm – although it may even drastically reduce the degree of choice available – is an agency relationship that allows faster development of the possibility of defining and broadening functioning and, therefore, of building up individual continuous capabilities over time⁹. These costs will be recognized by the firm only partially and in two different ways: on one hand, through the choice of the dimension of F_n , the firm n incorporates costs that it judges unavoidable, like those needed to buy/build/stock information, technical knowledge and skills, among which governance costs must also be included¹⁰. On the other hand, when deciding rates of pay, apart from the wage w , and weighting S_w , the firm can also include benefits, allowances and insurances so as to correct the “gap” between its demand – achievement of a specific corporate functioning – and the supply of labour services – recognition and development of capabilities. This can happen through individual bargaining or as the result of socially accepted rules. Thus the social cost of the division of labour which is not covered, or not recognised by firms as a body, is transformed into a cost for the production of income which, in turn, determines the real extent of social mismatch, measured in terms of a reduction in the well-being of individuals, with potential cumulative effects on levels of capability¹¹.

From a theoretical point of view this mismatch between social and private costs is usually explained through the concept of “externality”; however, the model shows that mismatches arise from within the *specific* division of labour, generated by the economic environment – space – in which firms operate. In the schematization proposed, t incorporates the envi-

⁹ In spite of their different starting points and theoretical language, the newer firm theories, in particular incomplete contract theories, [32] [33], recognize that the firm as an institution role is shrinking negotiation costs for the specific leverages aimed at increasing functioning and acknowledging the economic value of capabilities.

¹⁰ This happens due to the gradual integration of processes, accumulation of specific human capital and dedicated physical capital, but also due to sets of laws, standards and protocols.

¹¹ Exactly the same theoretical assumptions can be used to analyze the use and private reproduction of environmental resources, and, at the same time, the mismatch between the degree of use and sustainability of development.

ronmental determinants. In fact, t is itself dependant on the economic action of other operators, on the availability of infrastructures and, mirroring the mechanisms in operation within a firm, on governance that assures the consistency and targeting of the necessary leverages. From the point of view of this study, consistency and targeting relate to the formation of human capital and the capabilities it contains. But the horizon can and must be enlarged to include institutional and local government actions, the production of public goods, and the sharing of languages and rules. Relationship networks in general must be considered as strategic factors that produce social capital (S_K), which can positively effect the level of capabilities, thus simultaneously reducing both social distance z and costs t : in the model $K=f^{-1}(S_K)$ [5], [34], [35], [36] [37], [38], [39], [17]. Summing up, the efficiency of an economic system does not depend only on how transactions organized within single units – with costs of F – privately reduce mismatch in the coordination of factors; it also depends on how the stock of social capital reduces social mismatch by bringing the factors closer to a situation in which the advantages of the social division of labour are enjoyed – producing a reduction of t and z . Operationally, “space” has no autonomous economic meaning if it does not represent the specific conditions of the economic and social relationships that occur within it. It is exactly because different amounts and types of social capital produce different effects that the system must be considered as an autonomous unit of analysis; social capital cannot be seen as the sum of the parts of private capital, a function of F , because that does not include public goods, infrastructures, cultural production processes, and so on ¹². These considerations are the corollary of the proposition that, given the social division of labour – and thus positive transaction costs– institutional governance action cannot be avoided, regardless of the level of abstraction of the analysis; that is, institutional action has effects even when it appears to be absent, for example when everything is left to private decision. This last consideration is important in introducing our case study. The key feature of the institutional action we will be outlining is the gradual loss of the capability for governance –or the risk of this– due to the increasing scale of the processes which the institutions’ own policies have helped to begin.

¹² For a more comprehensive perspective see [40], [41], [42], [43], [44], [34], [4], [45], [46], [38], [39]

4. Administrative actions and territorial development: local systems of small and medium enterprises

The region covered by our study – the area between Modena and Reggio Emilia, in the heart of Emilia-Romagna - is a good test bed for theories concerning Spatial Mismatch, since the service sector plays a large role in the local economy and the industrial fabric is not localized at the suburban edges of cities but has been intentionally spread over a wide area by land planning policies started after the Second World War and still being followed today [47]. In a static representation, this area would appear to have a very low level of mismatch, or to be very rich in social capital stock, as already recognized and measured by the literature [48] [36] [35]. In contrast, our discussion will attempt to identify the origins of many critical aspects in the gradual reduction in social capital, relating to the scale of private economic activities, especially in the last two decades.

An understanding of the role of local government and its actions is fundamental in explaining the develop of what has become a system of Small and Medium Enterprises, SMEs, believed to be a model of industrial assets characterized by flexibility and innovation. The literature on the subject – mostly in Italian – is extremely rich, but has its origins about thirty years later than the events and political decisions that we are about to outline.¹³

The evolution of an SME-based development model was no coincidence but derived from a clear attempt to find an alternate way of achieving economic growth to the promotion of heavy industries. This idea was shared by a whole generation of public executives with a conviction that has guaranteed consistent policies and stable economic conditions for a wide area over a period of time unique in recent Italian history. It is equally important to note that the economic policies underlying localization decisions were all aimed at combating the “monopolistic” action of large enterprises – mostly in labour relations management – and were the outcome of a period of intense (and bloody) social conflict. Another crucial factor was the

¹³ The studies on local SMEs-based production systems started with the earlier studies of Beccattini on territorial systems [49] and of Brusco on the role and the efficiency of SMEs [50]. Many of the original contribution have been published in foreign publications, see [51] and [52].

great fear among public executives and policy-makers that a development model based on small units would prove fragile, since it was both rejected by economic theory and threatened by the undisputed strength and capacity for independent action of the large firms¹⁴. The constant drive to increase the stock of public assets therefore springs not only from an egalitarian social vision but also from the desire to protect the economic fabric by all means available, by stimulating the economic growth of the whole system through constantly upgraded infrastructure, technical expertise and a regional network of services for enterprises. The situation facing the local authorities at the end of the Second World War is effectively summed up by an unemployment rate of around 50% – 8th place on the national scale –, and inflation of 57%. With these dire conditions the main goal of local authorities was to create the structural conditions for economic development through territorial planning for industry.

Nowadays, the Modena area – part of our case study for the reconstruction of land use policies – is amongst the national leaders in ratings for well-being and sustainability¹⁵. Population growth of 50% in the last 60 years is the outcome of a unified city planning concept, subsequently also adopted by the Provincial authority, in which contingent initiatives have been planned considering their system-wide effects. Today the area is home to major production districts, local clusters of firms with a high degree of integration (agriculture and food processing, automotive, tiles, biomedical).

The pattern of territorial development over the last fifty years can be traced through the Land Development Plans introduced by the local authorities: in fact, the importance of the role of institution in the planning of the land use marks the difference between our case study – Provinces of Modena and of Reggio Emilia – and the other Provinces in the Emilia Romagna Region. Of course our test bed has some of the same problems as any other Italian city of the same size, but the main characteristic is the uniform distribution and high standard of

¹⁴ Large firms are indeed always have been located in the territory and many small firms have grown up to become leaders in their sectors: cooperative firms –both of production and of consume – have indeed played a very important role by increasing the stock of relational goods for the local area [53].

¹⁵ A recent work on incomes and life conditions in the Province of Modena has showed a Gini index for the distribution of incomes of 0.25, which is a rating typical of most advanced north Europe countries, versus values of 0.35 – 0.45 of USA and GB, [54].

social, medical and other services across the area, associated with a quality of life and residential building showing virtually no variation between central and suburban areas.

Fig. 2a - Mechanical industries (1951-2001)

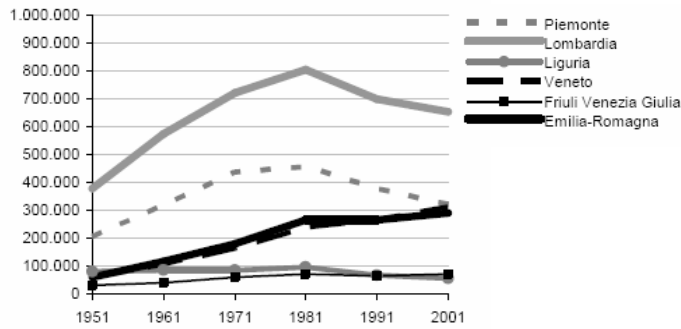


Fig. 2b - Total of economic activities (1951-2001)

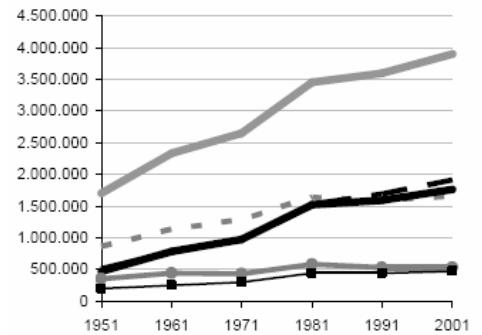
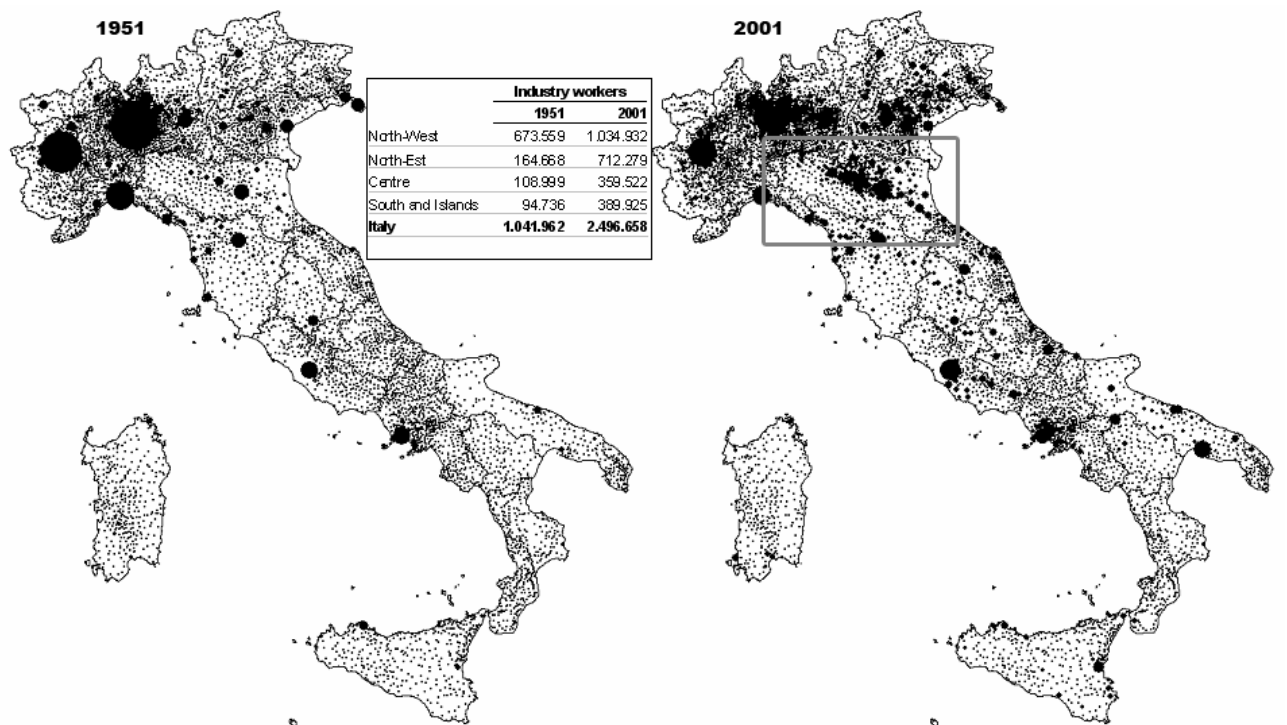


Fig. 2c - Spatial localization of mechanical industries in Italy (1951-2001)



Note: Fig.2a and Fig.2b show, respectively, the evolution of occupation in mechanical industry and in the complex of economic activities in North-West regions of Italy (Piemonte, Liguria e Lombardia) and in North-East (Veneto, Friuli ed Emilia Romagna). The comparison is useful because it shows the presence of capabilities needed for the growth of what is the most important sector of manufacture industry and the other economic activities. It is clear the process of tertiarization of North-West, with the crisis and the delocalization of large fordist firms, toward a continuous development of all sectors of North-East, particularly strong in the area of our case study. Fifty years of evolution of the system leads to a different situation in the northern part of Italy and, at the very same time, to an unchanged situation in the southern one. It is clearly shown in Fig.2c how much the mechanical industry has narrowed in the original industrial areas and how much it has expanded, in interaction with industrial districts, in the North-East, with

particular strong diffusion on the Emilia road axis, and the highest density in the area of our case study.

Source: Russo, M. and E. Pirani. *Agglomerazione spaziale dell'industria metalmeccanica italiana: aspetti teorici e implicazioni per l'analisi empirica*. in *Materiali di Discussione*. 2006. Modena: University of Modena and Reggio Emilia

Industrial policy in the local area has been implemented through a large number of actions across space and time, aimed at promoting the construction of production blocks which would encourage a diffuse, networked form of entrepreneurship. Key amongst these have been the foundation of centres for the provision of services to businesses to increase the competitiveness of local firms, the promotion of warrant cooperative societies to give SMEs access to loans, and the establishment of technical schools to provide firms with a skilled supply of labour. We will now briefly consider the milestones in institutional action in the territory, from the General Regulatory Plan, GRP, of 1958 through the period of joint administrations actions era of 1971 to the GRP of 1989.

1946-1958:

The Post-war recovery began under severe limitations posed by a national government still in something of a transition phase, which tended to hinder local action to deal with cities' and towns' problems. Local government had to enter into private negotiations to purchase agricultural land for industrial development; in the absence of a clear legal framework this negotiating process had to be carried out individually, for each area, with the previous owners compensated through the granting of planning permission on the land left to them. The first small-business estates were created in this period, and up to 30% of the entrepreneurs operating on them were former employees who had lost their jobs as large firms scaled down from their war footing, taking advantage of local government policies to start their own activities. The areas developed in this period break with the typical centre-suburbia dichotomy to offer an organic, multicentred pattern of growth, in which industrial infrastructure is flanked by services for the inhabitants/workers

1958-1970:

The main feature of this phase was the determination to overcome the restrictions on coordination limits arising from individual town plans; this led to the foundation of coordinating institutions with the task of drawing up future development plans, expanding the planning unit to the wider area around the main towns. This change in the scale of intervention helped generate particularly impressive growth. Local industry performed extraordinarily well during these years, with a growth in employment of 13%, an increase in the number of firms of 31%, and a mean size of 7.4 employees per firm, compared to a previous figure of 8.6; the aim of encouraging a large number of small business start-ups had been achieved.

1971-1989:

This period was defined by three main factors: the still strong growth in a SME-based economy¹⁶, the beginning of a transition to a service economy and the fiscal crisis produced by the growth of welfare provision. The economic growth was so impressive that the role of SMEs became a theoretical issue, attracting the attention of many observers, who were keen to analyse this new economic model¹⁷. Without a theory of the firm capable of explaining the role of SMEs, public executives did not have the theoretical tools for a correct evaluation of the phenomenon, leading to doubt about the course institutional action should follow. On one hand there was the fear of promoting and developing a weak economic fabric in which competition was distorted, sustained only by tax and social security evasion and to blame for an increased segmentation of the labour market, while on the other there was SMEs' admirable capability for innovation, which administrators wished to continue to promote (even at the cost of tolerating tax and social security irregularities). Again, the response was a massive expansion of services, to defend the local population's quality of life and in the attempt to provide firms with services that larger enterprises usually internalize: accounting, R&D, training and

¹⁶ In the period considered, increase in working population of 15%, production settlements of 33% and workplaces of 24%.

¹⁷ Literature on production districts is as fertile as the spatial mismatch one. For recent and international discussed contributions on the argument see [55] [56] and [57]

market research. New service agencies were sited on the immediate outskirts of the larger towns, and new chain store development was promoted, also outside town centres.

In addition, there was also an attempt to enlarge the network of social services, in order to extend welfare to the large numbers of incoming migrants whose arrival was a constant during the whole of this period. The constraints on these policies were the growing fiscal crisis and the increase in the national debt, which rose exponentially throughout the Eighties, peaking in the early Nineties at levels that are still the main brake on the development of the entire nation. The fabric of SMEs – in the whole of the national economy – was the main culprit in the growth of tax and contribution evasion which, in contrast with the previous period, moved beyond being merely an incentive to the growth of firms to become a cause of distortion in the distribution of personal incomes¹⁸. The capability of local institutions to intervene effectively fell as the scale of economic activity increased. This created the conditions for the “privatisation” of common goods (SK) that was to characterize the welfare crisis of the Nineties, leading to the formation of the private sector in care, health and transport¹⁹. A mechanism began which was to stimulate inequality in development by area, with “poor” and “rich” zones, a trend accelerated by the increasing migration from the south of Italy, which exacerbated the polarization of the system.

The main issue, and still one of the major constraints, was the huge increase in car ownership fuelled by economic development and propelled by the lack of public transport infrastructures. This seriously impaired the scope for intervention by local government, the strategic planning of lines of communication and the capability for achievement of multicentric linkage – i.e. an urban railway/subway system. Thus LPT began to decline just when the need for action was most acute.

¹⁸ The increase in tax evasion produces on one hand a distorted demand for private goods and on the other hand a fiscal crisis; this crisis limits – for the most efficient administrations, above all – the ability to realize and promote public goods, of which SK is composed.

¹⁹ In the model, the reduction of SK implies an increase in both t and m , but in different way depending on vector S_i , representing individual characteristics (gender, education etc.): in particular “distances” increase for more distant individuals and so, also, does the degree of Spatial Mismatches.

1990-2006: The fiscal crisis has triggered a major reduction not only in public current expenditure, but also in SK investments. Many services are being outsourced in the attempt to achieve better efficiency and lower labour costs. There is a large growth in private care firms, aiming to occupy new spaces on the market. The common belief is that SM between consumer and producers should be reduced by customising the service, while simultaneously cutting F , through the establishment of smaller organizations, better able to manage wage dynamics (reduction of S_w). A continuous reduction in firm size does increase the degree of customisation of the service, but it also produces as side-effects a dramatic rise in incoming migrant flows, more intensive land use, and a growth in urban revenue that pushes the newcomers out of the cities and induces the creation of ethnic clusters and over-consumption of the common good “mobility” (the figures clearly reveal what is happening).

Fig. 3a - % Variation of demography in municipalities of the Province of Modena 2004 / 1994

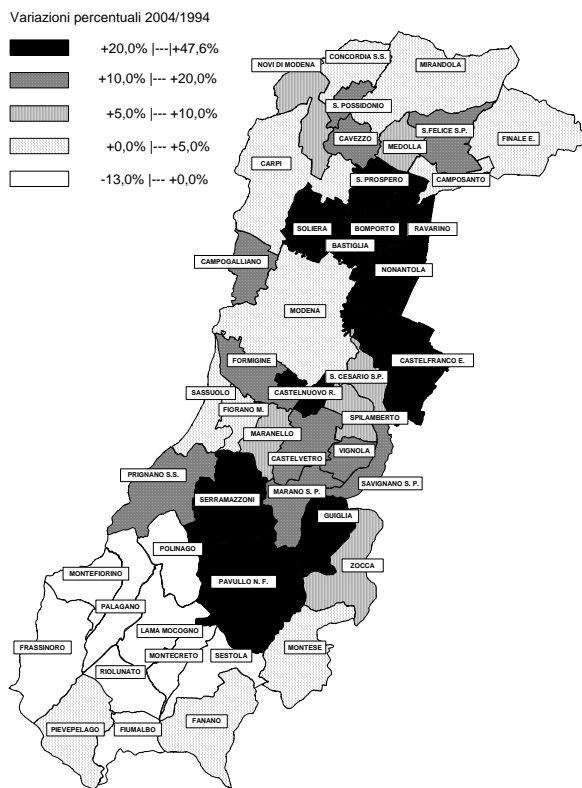
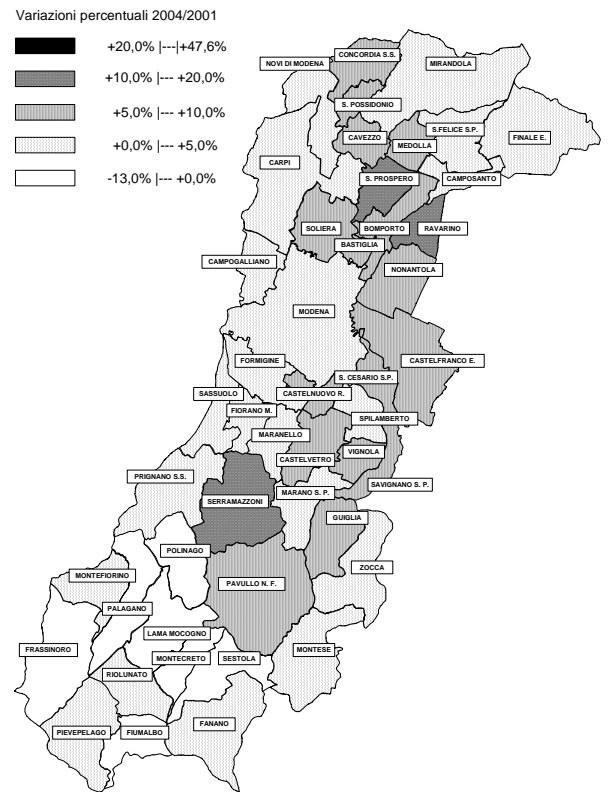


Fig. 3b - % Variation of demography in municipalities of the Province of Modena 2004 / 2001



Note: Fig.3a and Fig.3b shows the growth of population in municipalities of the Province of Modena in 1994-2004 decade and between 2001 and 2004. it is easy to see that both the demographic increasing and the acceleration of the trend have focused on the municipalities belt that surrounds Modena and have spread in contiguous towns. This trend is the very same that can be noticed in industrial districts, (the town of Carpi for textile district, Sassuolo for tiles, Maranello for automotive, Vignola for agriculture and Mirandola for biomedical). The strong demographic pressure and the limits of building regulatory plans have determined an increase of urban revenue that has progressively pushed out increasing quotes of populations toward contiguous municipalities. The spatial mismatch hypothesis in a strict geographical vision is indeed denied by what happened in the same period in the southern municipalities of the province (mountain ones) that are at the same distance from the large urban centres. In this case the increasing of population is caused by two different factors: on one hand the progressive shifting of older and/or richer population toward former holiday houses, on the other hand it is caused by the growing of the immigrants settlements.

Source: Province of Modena

The foundations for SM problems have thus been laid, due to the failure of previous institutional policies on quality and the allocation of housing resources. This ongoing scattering of activities and cultural clusters worsens the problem of lines of communication, as the roads available are insufficient for the continuously rising demand.

Fig. 4 - 14th General Population and Housing Census - Legal Population Demographic growth/decrement of municipalities in Emilia Romagna. 1991 and 2001 Censuses (percentages)



Note: Fig.4 shows the diffusion of the same phenomenon described in previous comments along the axis of Emilia Road. It is important to notice how much the pushing-out is directly related to the trends of the urban revenue: in the municipality of Bologna there is a shrink of the inhabitants larger than -7.5%, while the belt municipalities have an increase in population greater than +7.5%. The greyscale gradient shows the progressive formation of a common metropolitan axis around the four downtowns located on the historical centres of the main cities of the region: Parma, Reggio Emilia, Modena and Bologna

Source: ISTAT

Mobility issues are also complicated by the privatization of motorways and railways and by LPT incapable of attracting users – its satisfaction rating is at an all-time low. The very low expansion rate of those networks which have been privatised has cut the choice of modes of transport available, creating new “natural” monopolies. Due to both their complexity and their social implications, mobility issues are top of the agenda at all levels in local government. The paths being followed are basically two: on the one hand regional government has encouraged the creation of mobility agencies, mainly through integrated management of LPT over large areas²⁰. On the other hand, multilateral planning with the inclusion of the territory’s main stakeholders: the results of these processes, still in their very early stages, have yet to be seen.

²⁰ In 2003 the Province of Modena has created one of the very first mobility agencies in Italy.

Conclusions

Our work have tried to provide an integrated vision of both “spatial” and “social” mismatches. The common theoretical framework has been build within the institutionalist paradigm that have lead the analysis of this work. The institutionalist approaches permits to use different scaled units of analysis, with different levels of integration but coexistent under the very same historical-social pattern-determining context. Our discussed case study has traced the very positive interaction between institutional action and private choices, that occurred in a place initially deeply stroken by unemployment and poverty due to the Second World War. It has been stated that the increasing degree of spatial mismatch noticed by local administrations, firms and citizens, has appeared only when –mainly for fiscal crisis and contributively evasion – the redistributive action so important for the initial development, and operated mainly trough the increasing of social capital stock, has declined.

References

1. Zavodny, M. Determinants of recent immigrants’ locational choices. *International Migration Review* **1999**, 33, 1014-1030.
2. Allard, S. The urban geography of welfare reform: spatial patterns of caseload dynamics in Detroit. *Social Science Quarterly* **2002**, 83, 1045-1061.
3. Kain, J. The spatial mismatch hypothesis: three decades later. *Housing Policy Debate* **1994**, 3, 371-462.
4. Krol, R. The role of public capital in the economic development process. *International Journal of Public Administration* **2001**, 24 (10), 1041-1060.
5. Dasgupta, P. and I. Sarageldin, Dasgupta, P. and I. SarageldinEds. *Social Capital. A Multifaceted Perspective*. 2000, World Bank: Washington.
6. Kain, J. Housing segregation, negro employment, and metropolitan decentralization. *Quarterly Journal of Economics* **1968**, 82, 175-197.
7. Sen, A. *Inequality reexamined*; Oxford Un. Press: Oxford, 1992.
8. O'Reagan, K. and J. Quigley Family networks and youth access to jobs. *Journal of Urban Economics* **1993**, 34, 230-248.
9. Ihlanfeldt, J. and D. Sjoquist Job Accessibility and Racial Differences in Youth Employment Rates. *American Economic Review* **1990**, 80, 267-276.
10. Arnott, R. Economic Theory and the spatial mismatch hypothesis. *Sage Urban Studies Abstracts* **1998**, 26 (4).
11. Cooke, T.J. City-suburbs differences in African American male labour market achievement. *The Professional Geographer* **1996**, 48, 458-467.
12. Coulson, N.E., D. Laing, and P. Wang Spatial Mismatch in Search Equilibrium. *Journal of Labor Economics* **2001**, 19 (4), 949-972.

13. Brueckner, J.K. and R. Martin, W. Spatial mismatch: An equilibrium analysis. *Regional Science and Urban Economics* **1997**, 27 (6), 693-714.
14. McLafferty, S. and V. Preston Spatial mismatch and employment in a decade of restructuring. *The Professional Geographer* **1996**, 48, 420-431.
15. Hall, T. *Urban Geography*; Routledge: London, 2000.
16. Sultana, S. Racial Variatoinis in Males' commuting Times in Atlanta: What Does the Evidence Suggest. *The Professional Geographer* **2005**, 57 (1), 66-82.
17. Ostrom, E. Social Capital: a Fad or a Fundamental Concept. in *Social Capital: A Multifaceted Perspective*; P. Dasgupta and I. Sarageldin, Eds.; Word Bank: Washington D.C, 2000; p. 172-214.
18. Ponti, M. Le tariffe dei trasporti pubblici e i sussidi. *Economia Pubblica* **2003**, XXXIII (3), 119-129.
19. Cecchi, A., *Ambiente come bene pubblico, modelli, policy e valutazione*, in *Economia Politica*. 2004, Università degli Studi di Modena e Reggio Emilia: Modena.
20. Goodwin, B., C. Hass Klau, S. Cairns, C. Dowland, G. Parkhurst, G. Stokes, and P. Vythoulkas *The real effects of environmentally friendly transport policies*; University of Oxford: Transport Studies Unit, 1996.
21. Marletto, G. Paradigmi dell'intervento pubblico e politica italiana dei trasporti: una rilettura critica. *Economia Pubblica* **2004**, XXXIV (1), 69-97.
22. Becchis, F. Le fatiche del regolatore: fattori di debolezza nella regolazione dei servizi pubblici locali. *Economia Pubblica* **2003**, XXXIII (1), 103-121.
23. Boitani Il futuro della regolazione nel nuovo Piano generale dei trasporti. *Economia Pubblica* **1999**, XXIX (3).
24. Boitani, A. Concorrenza e Regolazione nei Trasporti. *Economia e Politica Industriale* **2004**, XXXI (124), 7-24.
25. Cangiano, R. La liberalizzazione del trasporto pubblico locale: dall'affidamento diretto alle procedure a evidenza pubblica.. e ritorno. *Economia Pubblica* **2005**, XXXV (6), 50-98.
26. Coase, R.H. The Nature of the Firm. *Economica* **1937** (4), 386-405.
27. Coase, R.H. The institutional structure of production. *American Economic Review* **1992** (4).
28. Coase, R.H. The New Institutional Economics. *American Economic Review* **1998**, (2).
29. Coase, R.H. Why Economics Will Change. *International Society for New Institutional Economics* **2002**, 4 (1).
30. Williamson, O. and S. Winter, Williamson, O. and S. WinterEds. *The Nature of Firm: Origin, Evolution, and Development*. 1991, Oxford University Press: New York. 18-33.
31. Delbono, F. and S. Zamagni *Corso di Microeconomia*; CLUEB: Bologna, 1995.
32. Hart, O., Moore, J. Property Rights and the Nature of the Firm. *Journal of Political Economy* **1990**, 98 (6), 1119-1158.
33. Milgrom, P. and J. Roberts *Economics, Organization and Management*; Prentice Hall: Englewood Cliffs, NJ, , 1992.
34. Goglio, S. Local Public Goods: Productive and Redistributive Aspects. *Economic Analysis* **1999**, II (1), 5-21.
35. Giovannetti, E. Capitale sociale e reti di relazioni. in *La ricchezza dell'equità*; M. Baldini, P. Bosi, and P. Silvestri, Eds.; Il Mulino: Bologna, 2004.

36. Helliwell, J. and R. Putnam Economic growth and social capital in Italy. in *Social Capital: A Multifaceted Perspective*; P. Dasgupta and I. Sarageldin, Eds.; Word Bank: Washington D.C, 2000.
37. Lal, D. *Unintended Consequences. The Impact of Factor Endowments, Culture, and Politics on Long-Run Economic Performance*; Mit Press: Cambridge (Ma), 1998.
38. Ostrom, E. *Governing the Commons: Evolutions of Institutions for Collective Action*; Cambridge University Press: N.Y., 1990.
39. Ostrom, E. Constituting Social Capital and Collective Action. *Journal of Theoretical Politics* **1994**, 6 (4), 527-562.
40. Antonelli, C. Collective Knowledge Communication and Innovation: the Evidence of Technological Districts. *Regional Studies* **2000**, XXIV (6), 535-547.
41. Audretsch, D.B. Agglomeration and Location of Innovative Activity. *Oxford Review of Economic Policy* **1998**, 14, 18-29.
42. Dei Ottati, G. Cooperation and Competition in the Industrial District as Organisation Model. *European Planning Studies* **1994**, II (4), 463-483.
43. Helmsing, A.H.J. Externalities, learning and governance: new perspectives on local economic development. *Development and Change* **2001** (32).
44. Glasmeir, A.K. Territory-based Regional Development Policy and Planning in a Learning Economy: the case of real service centers in industrial districts. *European Urban and regional studies* **1999**, 6 (1), 73-74.
45. Molina-Morales, F.X. and M.T. Martínez-Fernández The Industrial District as a Social System: Influence of Proximity on Value Creation. *Advances in Applied Business Strategy* **2005**, 9, 191-216.
46. Murdoch, J. Actor-Networks and the Evolution of Economic Form: Combining Description and Explanation in Theories of Regulation, Flexible Specialization and Networks. *Environment and Planning A* **1995**, XXVII (5), 731-757.
47. Galante, M., *Pianificazione e Governo del Territorio: il Caso di Modena*, in *Economia Politica*. 2002, Università degli Studi di Modena e Reggio Emilia: Modena. p. 266.
48. Putnam, R.D., R. Leonardi, and R. Nanetti *Making democracy work : civic traditions in modern Italy*; Princeton University Press: Princeton, N.J, 1993; xv, 258 pp.
49. Becattini, G. The Development of Light Industry in Tuscany. An Interpretation. *Economic Notes* **1978**, VII, 107-123.
50. Brusco, S. The Emilian model: productive decentralisation and social integration. in *Organizational capability and competitive advantage: debates, dynamics and policy*; W. Lazonick and W. Mass, Eds.; Elgar: Aldershot, 1995.
51. Pyke, F., G. Becattini, and W. Sengenberger *Industrial districts and inter-firm co-operation in Italy*; International Institute for Labour Studies: Geneva, 1990.
52. Pyke, F. and W. Sengenberger *Industrial districts and local economic regeneration*; International Institute for Labour Studies: Geneva, 1992.
53. Bertolini, P. and E. Giovannetti, *Industrial districts and internationalisation: empirical analysis and theoretical comment on a Long Established Industry in Italy*, in *Entrepreneurship & Regional Development*. 2006.
54. Baldini, M. and P. Silvestri Redditi, benessere, disuguaglianza. in *La ricchezza dell'equità*; M. Baldini, P. Bosi, and P. Silvestri, Eds.; Il Mulino: Bologna, 2004.
55. Bellandi, M. Paths of an Evolving City: Alternatives and Relevance in Local Policy. *European Planning Studies* **2000**, 6 (8), 799-808.

56. Bellandi, M. Italian industrial districts: An industrial economics interpretation. *European Planning Studies* **2002**, 10 (4), 425-437.
57. Crouch, C., P. Le Galès, C. Trigilia, and H. Voelzekow *Changing Governance of local economies. Responses of European Local Production Systems*; Oxford University Press: Oxford, 2004.