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**Social capital, individual social capital and sustainable growth
in the industrial districts**

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1. Introduction.

The concept of “social capital” has gained increasing attention in the sociological and economic literature. Social scientists have defined it and tried to put forward the links with other traditional concepts of capital (human and physical). Dasgupta and Stiglitz (2000) observed that it is difficult to think of a concept that has entered the common vocabulary of social analysis more quickly than the idea of social capital.

This concept, introduced and widely discussed, among others, by Bourdieu (1979, 1986) and Coleman (1988, 1990, 1994), has become a widespread tool of analysis of the consequences of social networks and co-operative forms of behaviour on economic performance and growth (Putnam 1993, 2000). Social capital has been defined as a “public good” available to members of the society linked together by norms and common values which favour co-operation and trust (Bianco 2001). It refers to all organisations (horizontal and vertical ones) and to various relationships that arise inside and among them. (Coleman 1990).

Other authors tried to capture the essential features of social capital in the networks that link together individuals in a community. Putnam claims that social capital coincides with trust and reciprocity that allow the surge and the growth of horizontal social networks (Putnam 1993). Fukuyama points to trust as the essential feature of social capital, which is «the expectation inside of a community of predictable and co-operative behaviour based on common norms and accepted by each individual» (Fukuyama 1995, 20). Finally, Mutti stresses the importance of trust explaining the process of its progressive building (Mutti 1998).

Macroeconomists have argued that active interactions amongst individuals lead to transmission of knowledge, higher levels of aggregate human capital and the development of trust, which in turn improves the functioning of markets via the reduction of transaction costs (Grootaert and van Bastelaer, 2002). They also tried to measure social capital and to understand its relation with economic and social performance. Very often, participation in social activities like those occurring in religious groups, youth groups, hobby clubs, etc., are the variables that researchers have considered to be a good proxy for “social capital”.

The local dimension seems to be a very interesting feature of social capital. It is at a local level that individuals live and work. It is at a local level that individual may enjoy a good life depending on their capabilities and the social networks they belong to. Putnam (1990) describes some studies showing that more civically active communities in the US are more successful in reducing poverty, unemployment and crime, and more successful in areas of education and health. Narayan and Pritchett (2000) explain higher incomes in a sample of Tanzanian villages with (*inter alia*) higher levels of associational membership. Similarly, Putnam (1993) shows that the higher the degree of participation in horizontal associations (networks) the better the quality of local and regional public services.

Alesina and La Ferrara (1999), whose study refers to a sample of US localities, suggest that income inequality and ethnic heterogeneity reduce the propensity to participate in a variety of social activities. This is a very interesting line of thought – inequality and fragmentation reduce social capital, thus they worsen the functioning of the markets – but one would also expect that social capital influences inequality and fragmentation, and this reversed causal relationship is not investigated in Alesina and La Ferrara.

According to Bianco (2001) the above definitions of social capital do not constitute a real advance in the socio-economic literature, but rather a way of systematising a set of concepts already developed in the same literature. The traditional analysis are mainly undertaken at an aggregated and macro level. Even when the object of the study is the local communities, social capital is considered as a useful condition, like any other public goods, external to single individuals. In a recent work Putnam claims that «precisely because poor people (by definition) have little economic capital and face formidable obstacles in acquiring human capital (that is, education), *social capital* is disproportionately important to their welfare» (Putnam 2000, 318). In this interpretation social capital has been considered as a kind of substitute for other personal resources.

The concepts of *capabilities* and *functionings*, seminally introduced by Sen, have been widely explored (Sen 1980, 1985, 1987, 1992, 1993, 1999) as well. As it is well known, Sen stresses the individual differences in obtaining

functionings (doings and beings) starting from equal endowments. The set of these *functionings* determines the individual well-being.

Few studies, however, have attempted to analyse the links between social capital and individual *functionings*. According to Comin and Carey «whereas Putnam's wide objective is to investigate how social networks and voluntary associations develop and result in economic prosperity, Sen's general concern is with the evaluation and assessment of social arrangements». They observe that «it could be argued that social capital, understood as a 'social resource', must also be an imperfect proxy for individuals' *capabilities*» (Comin, Carey 2001, 2).

Social capabilities can be defined as «those sets of beings and doings that can only be achieved as a result of social interaction.... They may represent valuable opportunities that people can achieve as a result of their collective agency or valuable freedoms that arise from their "social connectedness" and co-operation. Social capabilities are properties of social structures and processes and their characteristics such as trustworthiness, justice, reciprocity, etc..... We might find out, at the end, that Putnam and Sen are indeed compatible bedfellows» (Comin, Carey 2001, 17-18).

According to Comin and Carey social capabilities are «those capabilities that cannot be reduced to properties of individuals; rather they reflect properties of social structures and systemic level outcomes» (Comin, Carey 2001, 17). This approach is quite interesting, but it does not bridge the gap between individuals and society. In this respect it is necessary to introduce a concept that help understand the way in which each individual operates in a given socio-economic setting, in relationship with other people, in order to reach his goals. The concept of "individual social capital" seems to be the good one. It can be defined as the resources of trust, networks and social support that each individual can use in order to reach his goals. These endowments differ from the traditional ones (in a weberian meaning) like education, human capital, skills, age, etc. which belong to individuals as single persons and are considered as the main factors generating inequality between people.

On the contrary, individual social capital is strictly connected with the specific and local setting in which people live. It can be defined as «an

endowment of each individual (and worker) related to the social network in which the subject lives» (Bianco 2001, 3). According to Bianco these resources can be considered, in a sense, as social capabilities «that allow people to be socially related to each other in a network» (Bianco 2001, 13) and they depend on the socio-economic setting or, more specifically, the social capital embedded in the local setting.

The concept of “individual social capital” can be considered strictly related to that of social capability, although quite different. We claim that both concepts are important to understand the relationships between individuals and the socio-economic setting they live in. Moreover, they are important in determining the capacity of each individual to transform his/her endowments in a vector of goods necessary to undertake a good and healthy life. The concept of “individual social capital” can be useful for a better understanding of the concept of “social capability”.

Aim of the paper is to explore the concept of individual social capital, as a bridge between individuals and society and a link among social capital, social capability and individual *functionings*. The endowment of individual social capital, which differs according to the relationships of each individual with social and economic networks, determines his empowerment, that is the capabilities of each individual to participate in full to social and working life.

Industrial districts will be considered a good example of a local setting in which only native people participate in full to the production processes because of their sharing of locally developed tacit knowledge. Non native people are excluded because they do not hold this kind of individual social capital. The nature of the prevailing local knowledge – namely its degree of “appropriability” by the non natives - determines the individual empowerment, that is the “capability” of each individual to participate to social activities and the labor market.

A model will be developed in order to describe the growth path of an industrial district as a function of the (mis)matching of different types of workers (a proxy for individual social capital) with different kinds of local knowledge (a

proxy for social capital). The dynamic equilibrium conditions could bring some light on the relationship between empowerment and poverty for developing areas as well.

2. The “individual social capital” and the “capability approach”.

It is possible to think of a sort of chain linking together social capital, individual social capital and functionings according to Sen's approach (Sen 1992). The capability to obtain a set of functionings depends not only on individual attributes and external surroundings, but also on the relationships between each individual, other people and the socio-economic setting. These networks and their influence on individual capabilities represent what can be called social capabilities. Social capital becomes social capabilities when it is considered not separately, but strictly connected with the other endowments needed to obtain the set of functionings by each individual.

An intermediary step can be considered the capacity of each individual to get an income by selling on the market the services provided by his endowments (human and physical capital) and benefiting both from socio-economic networks (individual social capital) and from the possibility to share the system of values and views that characterizes his own local setting (social capital). In a monetary economic system, income is the mean to obtain the goods and services that allow to undertake a healthy life.

The capability to get an income can be referred to two groups of variables. On the one hand, those variables which refer to the concepts of physical and human capital, i. e. variables that are considered by traditional theories on inequality. On the other hand, those variables that refer to the local setting and the individual “owns” as a member of a group and/or of a society (Targetti Lenti 2001).

According to this interpretation, personal income depends not only on personal features, but also on the characteristics of the socio - economic and territorial setting. Many empirical researches have proved how the local features

of the labor market influence the entry into the workforce and generate inequality and differences in labor outcomes.

In particular, the concept of individual social capital becomes very important to explain inequalities among individuals. Think of the labor market: through the resources embedded in social relations (individual social capital), agents may have information that may prove essential in the process of job search. At the same time, in a network a “contact person” can provide important pieces of information to the potential employer, eventually affecting his choice: it may be said that under certain circumstances, an individual with “appropriate” individual social capital will be preferred to another one with an equal endowment of human capital. As Burt underlines «social capital is the contextual complement to human capital. Social capital predicts that returns to intelligence, education and seniority depend in some part on a person’s location in the social structure of a market or hierarchy. While human capital refers to individual ability, social capital refers to opportunity» (Burt 1998, 7).

Inequality in individual social capital contributes to social inequality, in the form of socio-economic achievements and quality of life. A substantial body of literature confirms the positive effect of what we call “individual social capital” on such socio-economic attainments as a better job, an early promotion, higher earnings, etc.; but there are different views about which features of the individual network are most useful in helping people get these higher returns.

Some authors have focused on the question of the strength of social ties. For instance, Granovetter maintains that weak ties rather than strong ties help the job seeker find a desired job and that weak ties are also beneficial to individuals looking for higher status jobs (Granovetter 1973, 1985, 1986). Other authors, such as Lomnitz (1977) or Grieco (1987), state that strong ties are essentials to find a job in poor areas. Lin (1990) argues that what is important in determining the degree of social mobility is not the strength (or weakness) of the social ties, but their “status”: «The probability of an individual’s gaining access to job information and influence increases when he or she makes contact with positions higher up in the structure» (Lin, 1990). According to Lin, what really matters is a prestige principle rather than an eterophily one, as Granovetter states.

From a general point of view, as Bianco (2001) claims, it can be said that the crucial point is to be able to mobilize individual social capital suitable to achieve the desired result in a particular context. Individual social capital has to be specific and located. For example, if an individual has aspirations related to his family, he will probably use strong ties.

Neither the strength of the ties nor their status are important per se. What really matters is to own the right individual capital in relationship to specific goals. For example, if an individual lives in a very closed blue-collar area, he/she will probably own a lot of individual social capital which is completely useless (or even counterproductive) should this individual be willing to change his/her social condition.

Empirical researches show that individual social capital coming from strong and local ties, usually homogeneous in resources, is not very useful to social mobility, but it is important “not to go down” in the social structure, both for individual in the upper and in the lower classes.

Individuals belonging to upper social classes typically own a larger and more differentiated stock of individual social capital. If one considers that they usually own a larger endowment of human capital as well, individual social capital may be seen as a factor contributing to a further deepening of social and economic inequality.

The capability to get an income and reach social mobility depends on individual social capital. As already stressed, this kind of capital is strictly connected with the specific local setting where people live in, that is with local social capital. Indeed, the features of each individual network depend on the prevailing socio-economic structure, that shapes the overall picture of opportunities and risks for each member of the different social groups.

Inequality in individual social capital may exist across gender and ethnic groups. In some societies male children are encouraged and rewarded for creating extended and heterogeneous social ties, whereas female children are constrained or even punished for doing so (Lin, 2000). Other studies, for instance Moore (1990), confirm that women have different access to social capital because of their different social structural locations. Women tend to have an higher proportion of

kin ties in their personal networks than men, and this lowers their opportunities for social mobility. The different position of women and men in the work force, in marital roles and in parenthood create different sets of opportunities for and constraints on friendship-building. As Moore underlines, relevant opportunities such as the possibility of getting a job outside the family, occur more often for men than for women. Similarly, structural constraints on the development of network ties - such as the responsibility of the housework and the childcare - are much more binding for women than men.

In general, a different access to social capital due to a weak structural position can be suffered by minority groups. For example, members of an ethnic group tend to interact simply with each other, only acquiring homogeneous resources that are basically useless in favouring upward social mobility. This can explain why immigrants tend to be and stay relatively poor (Reynery, 1996).

Moreover, although immigrants might be willing to integrate into the host society, their specific culture and networks is maintained by the exclusive interaction with the members of their own community. If in the host country, local-specific skills are needed to enter the labor market, immigrants who lack them will be at a disadvantage compared to natives with comparable demographic characteristics and measurable skill levels such as human capital. All the more so when their culture is particularly "distant" from the host country's. Thus social inequality persist across natives and immigrants which can only obtain jobs usually refused by native workers.

It may also happen that immigrants use successfully their specific skills and individual social capital to achieve business ownership in some narrowly defined segment of the host economy, building their success on kin and ethnic networks. Portes and Jaensen (1987) have advanced that ethnic economic enclaves provide opportunities for entrepreneurs and workers to gain a foothold in the economy and the labor market.

3. Individual social capital and industrial districts.

As it has been pointed out, those variables referred to the local context are very important to enter the labor market. In particular, in some local production system, such as the industrial districts, given the peculiar nature of labor demand, these variables are essential.

Industrial districts, in fact, can't be seen as mere agglomerations of firms either from a technological or financial or simply spatial point of view; rather, they are complex socio-economic systems linking together a community of people sharing common values and culture within the economic framework of a market and a production system. In the district, an homogeneous system of values and views prevails. This is an expression of an ethic of work which affects all the main aspects of everyone's life and become a sort of community-like superior interest that only native people can really understand.

This system of values can be considered one of the preliminary condition for the development and the reproduction of the district itself. Indeed, the local production system is strongly embedded in those communitarian values which are transmitted generation by generation through such social and economic institutions as the family, the church, the school, associations and trade unions. Moreover, the historical path of the district entails the development of an embedded capital that can be defined as the social result of a historical process of accumulation of technological capabilities and skills (Belussi, Pilotti, 2001).

Indeed, in the district tacit knowledge, progressively developed within the production process and the daily economic experience, adds to the available codified knowledge that comes from outside. This gives rise to the growth of a stock of "contextual knowledge", a strategic and immaterial resource that is essentially specific to the local setting and strictly linked to the productive knowledge existing among the district's firms.

Contextual knowledge can be considered as a form of cognitive social capital, essential to local production as it brings about competitive advantages. The joint action of tacit and codified knowledge allows the district to maintain its identity and simultaneously makes the district able to face the competitive outside

world. On the one hand, the district can hold its traditional capabilities but, on the other, it can absorb sophisticated new technologies. This way, the district can satisfy the more and more differentiated needs of the consumers.

Contextual knowledge, as such, can never be completely imitated from the outside. Spatial proximity and social mechanisms of knowledge sharing facilitate its “local” transmission, but it is very difficult to transfer it to external environments. Obviously, some of its codified elements can be imitated elsewhere and they are more at risk, but on the whole contextual knowledge can never go beyond the local production system. Only the “knowledgeable” agents of the district can own it, so that they are the only ones who can completely share local traditions, habits, language and entrepreneurial vision of the district.

In the industrial districts only the natives have the specific individual characteristics which let them participate in full to social life and productive activities. The native workers will be more productive than the non-native ones and, *ceteris paribus*, they will be preferred to them. In the industrial districts, the native workers’ greater capability to enter the labor market depends, *inter alia*, on their large amount of individual social capital. In the local production systems, social relations are characterised by a high level of trust and usually individual networks cover all over the community, which means that in a similar contest “everyone knows everyone”.

4. A model of growth in Industrial Districts.

In an industrial district, the labor market equilibrium and the possibility to get a wage depend on the capability to participate to the labor market; which in turn depends not only on the human capital, but also on the matching of the workers’ features (a proxy for individual social capital) with the local knowledge (a proxy for social capital).

As it has been said above, industrial districts are very close community where “everyone knows everyone”, where agents continuously interact and put in common their information, their practical knowledge, their “mental models”.

Socially shared knowledge, a public good essential to production, is created. In this social contest, only the native workers, which continuously interact, have the capability to assimilate localised knowledge (which, once absorbed, becomes individual social capital). Non-native workers, that can hardly join the local social networks, can't integrate into the community of the district in order to share and have access to localised knowledge.

Since in industrial district "contextual knowledge" is essential to local production, individual with this local specific skill (the native workers) will be more productive than and so preferred to the immigrants with comparable demographic characteristics and human capital. This is the reason why in certain industrial districts there are low levels of migration: potential immigrants who lack the "right" individual social capital can only get unskilled occupations, and they do not have incentives to migrate. This is especially true in those industrial districts where "contextual knowledge" is essentially tacit. Significant levels of practical knowledge are at work in any kind of industrial district. However, among them a great diversity exists. In some of them tacit knowledge is the only "true" form of competitive advantage; in others, it is blended with more codified knowledge (that is owned by everybody and then by the immigrants as well); in others, again, tacit knowledge has a very small weight and contextual knowledge is almost completely codified (here immigrants and natives basically own the same knowledge).

The idea embedded in our model, based on a model previously developed by Murat and Paba (2001, 2002), is that the capability to enter the labor market depends not only on the human capital, but also on the matching of workers' features (a proxy for individual social capital) with the local knowledge (a proxy for social capital). The less local knowledge is appropriable by the non native workers, the lower their capability to enter the labor market and then the more limited the migration flows to the industrial district (Lodigiani 2003).

Assume there are two regions, 1 and 2, producing respectively two goods, 1 and 2, in a perfectly competitive setting. Good 1 can be consumed and invested and, as a capital good, is used in the production of both goods. Good 2 can only be consumed.

Good 1 is produced with three factor of production: L_1 (workers of region 1), L_2 (workers of region 2) and K (capital), whereas goods 2 is only produced with L_2 and K , as only L_2 and K are mobile (migration only takes place from region 2 to region 1). Region 1 is technologically more advanced than region 2.

In region 1 there are externalities created through a combination of learning by investing (the experience with investment contributes to labor productivity or, to put it more simply, the higher the capital stock *in the economy*, the higher the labor productivity *in each individual firm*) and standard, instantaneous knowledge spillovers. Hence, at the firm level there are constant returns to scale, whereas at the sectoral level there are increasing returns to scale. Capital and labor are gross complements.

In region 2 only routine processes take place. Technology presents diminishing returns to scale. Capital and labor are gross substitutes.

The production function of region 1 is:

$$Y_1 = (fK)^d [BfK_e (u_1 L_1 + I u_2 L_2)]^{1-d} \quad 0 < I < 1$$

whereas the production function of region 2 is:

$$Y_2 = \left\{ [(1-f)K]^n + [B(1-u_2)L_2 + IB(1-u_1)L_1]^n \right\}^{-a/n}$$

where Y_i ($i = 1, 2$) denotes the output of region i , K is the physical capital, $0 < f \leq 1$ indicates the proportion of capital in the region 1 (and $(1-f)$ is the proportion of capital in the region 2)..

L_i is the number of workers of the region i .

$0 < u_1 \leq 1$ and $0 < u_2 \leq 1$ indicate the proportion of L_1 and L_2 in the region 1. As L_1 is not a mobile factor, $u_1 = 1$. $(1-u_1)$ and $(1-u_2)$ indicate the proportion of L_1 and L_2 in the region 2).

$\underline{L}_1 + \underline{L}_2 = \underline{L}$ is the total labor supply, assumed constant over time.

$B \geq 1$ denotes the initial human capital that individuals own when they enter the labor market.

In region 1 human capital is very important. According to Murat e Paba (1999), human capital can be divided into two components: one is “universal” and refers to codified knowledge; the other is specific, reflects the local culture and can be assimilated to tacit knowledge. This specific part of human capital can be interpreted as being social capital owned by individuals.

In the production functions, $0 < I < 1$ denotes the proportion of codified knowledge and $1 - I$ (a proxy for individual social capital) indicates the specific, tacit knowledge, which is only owned by the native population in the region¹.

Assume that at the beginning of the story $u_1(0) = 1$ and $u_2(0) = 0$ (and so $(1 - u_1) = 0$ $(1 - u_2) = 1$).

In region 2, as can be seen by the production function, capital and labor are gross substitutes which means, in a perfectly competitive market, that there are no incentives to migrate from region 1 to region 2 ($u_1 = 1$ and $(1 - u_1) = 0$).

The two production functions can be rewritten as:

$$(1) Y_1 = (fK)^d [BfK_e (L_1 + Iu_2L_2)]^{1-d} \quad 0 < I < 1$$

and

$$(2) Y_2 = \left\{ [(1-f)K]^{-n} + [B(1-u_2)L_2]^{-n} \right\}^{-a/n}$$

In region 1 the initial human capital stock of native workers is B , whereas immigrants only hold IB (they lack specific knowledge). Taking into consideration the externalities discussed above, the human capital stock of the two groups of workers will be respectively BfK_e and $IBfK_e$.

¹ In this model, based on Murat-Paba (2001) individual social capital is formalized through contextual knowledge absorbed by individuals. At this moment a formalisation of social networks is lacking.

Native and non-native workers are perfectly substitutes at the constant rate $-1/I$. The marginal productivity of both kind of workers and consequently the labor demand schedule is:

$$(3) Y_{1L_1} = \frac{(1-d)Y_1}{(L_1 + I u_2 \underline{L}_2)} = w_1$$

and

$$(4) Y_{1L_2} = \frac{I(1-d)Y_1}{(L_1 + I u_2 \underline{L}_2)} = w_2$$

The productivity levels differ for the “ I ” parameter. The closer to 1 is I , the closer to the natives’ is the immigrants’ productivity, and vice versa. In a perfectly competitive market, where wages reflect productivity gaps, firms will hire indifferently native and non-native workers.

In equilibrium, supply equals demand for both labor inputs:

$$(1/w_1)(1-d)Y_1 - I u_2 \underline{L}_2 = \underline{L}_1 \text{ and } (1/w_2)(1-d)Y_1 - L_1/I = u_2 \underline{L}_2$$

From these equilibrium conditions one can get the equilibrium wage rates, w_2^* and w_1^* , which perfectly reflect workers’ different productivity levels: $w_2^* = I w_1^*$. At every time t , under perfect competition, full employment will be reached.

As we have said, industrial districts can be divided into three main categories: local production systems where tacit knowledge prevails (first type district); local production system based on a balance between tacit knowledge and codified knowledge (second type district); local production system where codified knowledge prevails (third type district).

In the first cluster, specialised in traditional skill-intensive industrial sectors, knowledge is mainly embedded in social practices. The economic performance of firms belonging to these districts is based on craft production. In these districts, tacit knowledge among agents is prevailing: in our model, I tends to zero. Migrants, who lack craft-based knowledge (tacit knowledge), have a very low productivity and, under perfect competition, even if they are hired, they will receive a very low wage.

On the contrary, in the third cluster, where codified knowledge prevails, production system is getting similar to standardized method of production with a complex industrial structure (emerging leading firms, hierarchy of local industrial structure, presence of large dominant networks). In these districts there is not a very important artisan tradition and, as a consequence, a codifying process - translating localised knowledge into a transferable form, easy to understand and use - is very likely to emerge. The weight of factors not specific to the district, easy transferable from/to the outside, increases. In this framework local firms are more likely to absorb knowledge from the outside and the knowledge creation process is often formalised in R&D departments. In this cluster, as contextual knowledge is almost completely codified, basically there are no differences between immigrants and natives workers². In our model I tend to 1: the two groups of workers will have the same productivity, face the same labor demand and get the same wage. They will be perfect substitutes at a rate of -1 .

In the second cluster, tacit knowledge is still relevant, but codified knowledge is important as well. Local agents share both tacit, non-appropriable knowledge and codified, appropriable knowledge. In our model, I can assume values between 0 and 1, depending on the relative importance of the two kinds of knowledge. Under perfect competition in all the three kinds of district a full employment equilibrium will be reached at every time t .

After having described the features of the various kinds of district, let's turn to describe their dynamics. The representative agent maximises his objective function (his dynamic utility function) subject to some constraints. In particular, given the Cobb-Douglas instantaneous utility function, $\mathbf{u}(C_1, C_2) = C_1^b C_2^{1-b}$ $0 < b < 1$, and the accumulation constraint, $\dot{K}(t) = Y_{1t} - C_{1t}$, the consumer problem can be expressed as:

$$\text{Max} U(0) = \int_0^{\infty} e^{-rt} \log[\mathbf{u}(C_{1t}, C_{2t})] dt$$

s. t.

$$\dot{K}(t) = Y_{1t} - C_{1t}$$

² We are talking about immigrants and native workers with the same level of human capital.

$K(0) > 0$ given

$$\lim_{t \rightarrow +\infty} m(t) K(t) = 0 \quad (\text{transversality condition})$$

Expressing the utility function in terms of expenditure, we can find that the optimal growth rate of expenditure is

$$\frac{\dot{E}}{E} = d[B(L_1 + I u_2 L_2)]^{1-d} - r$$

Now let's find the growth rate of relative prices (the latter are defined as $p = p_2/p_1$), which is useful to calculate the other relevant growth rates of the model. We know that under perfect competition $Y_{1K} = pY_{2K}$; substituting in this equation the marginal products and taking the derivative with respect to time, we get³

$$\frac{\dot{p}}{p} = (1-a) \frac{\dot{K}}{K}$$

With a Cobb-Douglas instantaneous utility function and good 1 as the *numéraire* of the system, C_1 and C_2 can be expressed as $C_1 = bE$ and $C_2 = (1-b)E/p$. Moreover, it is easy to see that C_1 grows at the same rate as overall expenditure, whereas C_2 grows at a lower rate in real terms. As it can be seen from the accumulation constraint, the average product of capital in 1 is constant and then the growth rate of capital is equal to the growth rate of consumption of good 1. It is easy to see that the capital stock (remember that only good 1 is used as a capital good), nominal expenditure, real consumption and output of good 1 all grow at the same rate $d[B(L_1 + I u_2 L_2)]^{1-d} - r$. Output and

³ Consider that in perfect competition $Y_{1K} = pY_{2K}$, If in the equation we substitute the marginal products and we take the derivative with respect to time, we obtain that

$$\frac{\dot{p}}{p} = \left\{ n + 1 - \frac{(a+n)}{\left\{ 1 + \left[\frac{B(1-u_2)L_2}{(1-f)K} \right]^{-n} \right\}} \right\} \frac{\dot{K}}{K}. \quad \text{As the rate of capital is strictly positive, } p \text{ is raising}$$

during time and L_2/K tends to 0. Consequently, $\frac{\dot{p}}{p} = (1-a) \frac{\dot{K}}{K}$

consumption of good 2 grow at the same rate of the other variables in nominal term, but at a lower rate in real terms, $\mathbf{g}_{C_2} = \mathbf{g}_{Y_2} = \mathbf{a}\mathbf{g}_K$.

Growth rate depends on u_2 and it is therefore important to establish its long run equilibrium value. Letting aside the technicalities, just concentrate on the basic intuition. A positive investment in physical capital increases labor productivity and then wages in region 1. Workers will have an incentive to migrate from 2 to 1. At the same time, an increasing capital stock lowers its relative price and in region 2, where labor and capital are gross substitutes, labor demand in decreases. Migration from 2 to 1 will take place and in region 1, where labor and capital are gross complements, new investments will take place as well, and so new migrations, etc. etc.. This process will continue until total labor supply will be concentrated in region 1: $u_2=1$. The steady-state growth rate will be $\mathbf{g} = \mathbf{d}[B(\underline{L}_1 + \mathbf{I}\underline{L}_2)]^{1-d} - \mathbf{r}$.

Now consider the different types of district: it clearly comes out that, given B , $\mathbf{g}_{D1} < \mathbf{g}_{D2} < \mathbf{g}_{D3}$ ⁴. Given the initial level of human capital, in those districts where tacit knowledge is important, a considerable weight of immigrants on the labor force makes the system grow slower than the districts where codified knowledge is important.

Now let's introduce a realistic assumption. In the economy there are some institutional rigidities, such that a uniform wage rate is paid for the same job even when the productivity level of different workers is different. Let's assume therefore that $w_1 = w_2$, i.e. native wages are equal to non-native wages despite their different productivity levels.

From equation 4, we can write:

$$Y_{1L_2} = \frac{\mathbf{I}(1-\mathbf{d})Y_1}{(\underline{L}_1 + \mathbf{I}u_2\underline{L}_2)} = w_1.$$

If in the right hand side of the equation we use $\frac{(1-\mathbf{d})Y_1}{(\underline{L}_1 + \mathbf{I}u_2\underline{L}_2)}$, we shall

get:

⁴ $\mathbf{g}_{D1} = \mathbf{d}[B_1\underline{L}_1]^{1-d} - \mathbf{r}$; $\mathbf{g}_{D2} = \mathbf{d}[B_2(\underline{L}_1 + \mathbf{I}\underline{L}_2)]^{1-d} - \mathbf{r}$; $\mathbf{g}_{D3} = \mathbf{d}[B_3(\underline{L}_1 + \underline{L}_2)]^{1-d} - \mathbf{r}$

$$(5) \frac{L_2}{\underline{L}_2} = 1 - \frac{1}{u_2} \frac{1-I}{I} \frac{\underline{L}_1}{\underline{L}_2}$$

that summarises the main characteristics of the short run equilibrium. $\frac{L_2}{\underline{L}_2}$ is the labor demand to labor supply ratio in region 2. In the districts of third type this ratio is equal to 1, which means that in these clusters full employment will be reached (non-natives and natives have the same productivity and firms hire them indifferently at the same wage rate). In all the other districts full employment won't be reached as $\frac{L_2}{\underline{L}_2} < 1$.

The more important tacit knowledge is, the lower the employment level of immigrants. In districts of the first type, where craft-based knowledge is extremely important, migrants without the specific individual social capital will have a very low productivity level and, under a wage rigidity regime, firms will prefer not to hire them. All this refers to a short run equilibrium, but the results don't change in the long run.

Indeed, in a dynamic setting, a positive growth rate of capital makes labor demand increase, but only for native workers. When native workers are not available anymore, firms will turn to the immigrants. They will hire non-native workers up to the point where their labor productivity will be equal to the prevailing wage rate, i.e. $Y_{1L_2} = w_1$.

At this point, since agents are rational and perfectly informed, they prefer not to migrate to region 1 anymore. At the same time, as before, an increasing capital stock lowers its relative price and in region 2 firms substitute labor with capital. Then workers will loose their jobs and enter a condition of long-run unemployment.

From equation (5), long-run unemployment rate can be expressed as:

$$\frac{L_2}{\underline{L}_2} = 1 - \frac{1-I}{I} \frac{\underline{L}_1}{\underline{L}_2}$$

The more important tacit knowledge is, the higher the unemployment level. The steady-state growth rate will be:

$$g_F = d \left[B(\underline{L}_1 + I L_2) \right]^{1-d} - r \quad \text{with } L_2 \leq \underline{L}_2$$

Now growth rate is negatively influenced by both $I < 1$, and $L_2 < \underline{L}_2$. In fact, the more I tend to 0 and the more $L_2 \leq \underline{L}_2$, the lower the growth rate of the economy is. Considering the three main cluster of districts, in the third type the growth rate is relatively high and equal to the previous case without institutional rigidities. In the first type cluster the growth rate is as low as before. In the second, finally, wage restrictions influence the growth path very much. Since growth is negatively influenced by both $I < 1$, and $L_2 < \underline{L}_2$, and this two factors are positively correlated to each other, the more important tacit knowledge in the district is, the higher the unemployment level will be (the more important individual social capital is, the higher the number of immigrants lacking the capability to enter the labor force) and the lower the growth rate of the economy compared to the without-wage-rigidity setting.

5. *Conclusions.*

In this paper we have tried to show how individual social capital, an endowment of each individual (and worker) related to the social network in which the subject lives, can be considered as a bridge between individuals and society, a link between social capital, social capability and individual *functionings*. This individual's endowment, which differs according to his/her relationships with the social and economic networks, determines its empowerment, i.e. the capabilities of each individual to participate in full to social and working life.

We have shown that industrial districts can be considered a good example of a local setting where only native people can participate in full to the labor market, as they own the "right" individual social capital which is essential to local production. This is especially true in those industrial districts where "contextual knowledge" is essentially tacit. Indeed, in some of them tacit knowledge is the only "true" form of competitive advantage; in others, it is blended with more codified knowledge (that is owned by everybody and then by non natives as well); in others, again, tacit knowledge has a very small weight and contextual knowledge is almost completely codified (here immigrants and natives basically own the same knowledge). We have seen that the less local knowledge is

appropriable by the non native workers (i.e. the more important individual social capital is), the lower their capability to enter the labor market. This will decrease the migration flows to the industrial district and affect its growth path.

In our model local production systems, with a very important artisan tradition, grow slowly compared to districts where production system is getting similar to standardised method of production with a complex industrial structure. Moreover, districts that maintain craft-based traditions, but also try to absorb knowledge from outside, grow more than traditional districts, but less than districts where codification trends prevail. Individual social capital seems to have a very important role in explaining the different path of growth of different kinds of districts. Growth rates are influenced by both the relative weight of tacit knowledge (the importance of individual social capital) and the employment level of immigrants. As a consequence, we can argue that the more the capability to enter the district labor market is influenced by individual social capital, the lower the migration flows to the district and the slower its growth path.

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