Social Capital, Modernization and Growth

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1 Introduction

The concept of social capital has been introduced in recent sociological and empirical economic literature as referring to connections among individuals, social networks and the norms of reciprocity and trustworthiness that arise from them. Or, in other words, civic virtue embedded in a dense network of reciprocal social relations.

By analogy with notions of physical and human capital (tools and training that enhance individual productivity), social capital is supposed to have value, as it increases the productivity of individuals and groups. There is both an individual and a collective aspect: individuals benefit, hence having an incentive to invest time and energy in creating or acquiring it; at the same time there are important externalities that affect the wider community (the social return exceeds private returns).

A similar concept was applied earlier on by Buchanan (1975). According to his analysis, the structure of law (formal or informal) or *law-abiding* attitudes represent a form of social or public capital stock. By acting so as to maintain the public capital asset, the individual confers external economies on others; it may though be privately rational to 'destroy' the existing public capital, to convert this asset into privately enjoyed 'income'. Individual decisions may erode the structure, reducing the stability of social interaction not only for his fellows but for those who come later. To restore earlier levels, abstension from consumption is required. For all practical purposes, public or social capital may be permanently lost once it is destroyed. It may be impossible to secure its replacement, at least on the basis of rational individual decisions. Coleman (1988) as well used a concept of social capital in his study of the creation of human capital and the role of the social environment in education.

Social connections are also important for the rules of conduct that they sustain (mutual obligations, norms of reciprocity). A society characterized by generalized reciprocity is more efficient than a distrustful society, for the same reason that money is more efficient than barter (you don't have to balance every exchange instantly). Trustworthiness lubricates social life. Frequent interaction, civic engagement, and social capital entail mutual obligation and responsibility; can facilitate cooperation for mutual benefit; reduce incentives for opportunism and malfeasance; facilitate gossip and other valuable ways of cultivating reputation (an essential foundation for trust in a complex society).

Social capital comes in many different forms with many different uses: generally good for those inside the network, but the external effects on outsiders

may not always be positive (as in the case of gangs, etc.). As Putnam (2000) puts it, we may distinguish between 'bonding' and 'bridging' social capital. 'Bonding' social capital is inward looking, tends to reinforce exclusive identities and homogeneous groups. It is good for internal reciprocity, solidarity, support and loyalty (but it can generate antagonism towars outsiders). 'Bridging' social capital is outward looking, cuts across diverse social cleavages. It is good for linkages to external assets and information diffusion (though ties are weaker).

Empirically, there are no reliable, comprehensive measures of different forms of social capital and their evolution over time. In order to measure social capital, empirical researchers use several indicators of formal and informal community networks and social trust: e.g. group membership, attendance at public meetings or clubs, volunteer work and community projects, home entertaining and socializing with friends, social trust, perception of honesty, etc.. These indicatores are highly correlated, and can be combined into an index which varies substantially over time and across space (e.g. US states).

Large-scale socio-economic changes associated with industrialization and modernization are related in the sociological literature to a decline in social capital, both in more developed countries (e.g. the US - cf. Putnam (2000)), as well as in less developed economies (e.g. Ethiopia - cf. Levine (1972)).

Reciprocity, honesty and trust reduce transaction costs and improve efficiency. An effective norm of generalized reciprocity, honesty and trust is bolstered by dense networks of social exchange: members of a tightly knit community are likely to encounter one another in the future, or to hear about one another, they have reputations at stake. Social networks extend the radius of trust beyond the people whom we can know personally. As the social fabric of a community becomes more threadbare, however, its effectiveness in transmitting and sustaining reputation, norms of honesty, generalized reciprocity and trust declines.

Cities, compared to small towns, typically display less social trust and altruism, higher crime rates (which reduce social trust by victims, updating their views about trustworthiness of others), more cheating. Erosion of social capital is reflected both in higher crime rates and the increasing role of lawyers and law enforcement.

The decline in social capital is also related to intergenerational change: replacement by cohorts with less civic and social virtues. E.g. in the US, after controlling for education (despite higher education), all indicators of social capital are lower for the generations coming of age after the early 60s: voting, interest in politics, membership in civic associations, religious participation,

reading newspapers, trust, etc. (although they appear to be more tolerant and less moralistic). Values and habits are acquired during formative years with less emphasis on the public sphere and more television. This generational change (the reduction in the intergenerational transmission of social capital) is a more important factor than changes in the family structure, racial composition, government programs etc.. Higher levels of human capital are observed toghether with lower levels of social capital.

Child development is powerfully shaped by social capital. Trust, networks, norms of reciprocity within a child's family, school, peer group, and larger community have wide-ranging effects on the child's opportunities and choices, on his behavior and development. Holding constant other socioeconomic and demographic characteristics, social capital is second only to poverty in the effects on children welfare (infant health and mortality, teen birth rate, dropouts, involvement in crime, premature death due to suicide or homicide, child abuse).

Another empirical finding is the positive effect on school performance (especially informal social capital - social trust, informal connections): it usually implies higher levels of parental support, lower levels of student misbehavior, less time watching TV, more productive uses of leisure. Student learning is influenced not only by what happens in the classroom and at home, but also by social networks, norms and trust in the school and in the wider community (cf. the better performance of Catholic and other religious schools in the US, as well as smaller schools).

Particularly important is the embeddedness of young persons in the enclaves of adults most proximate to them, first and most prominently the family and second, a surrounding community of adults (communal social capital, relational trust). Families that enjoy close social bonds and parents who instill values of reciprocity in their kids are more likely to gain a greater degree of compliance and adherence to their values (and children less likely to drop out of school, to get into drugs or delinquent activity).

The importance of social capital has long been stressed for the maintenance of safe and productive neighborhoods (Jacobs (1961): informal contact among neighbors, feeling for the public identity of people, a web of public respect and trust, support in time of need. Higher social capital, ceteris paribus, translate into lower levels of crime and social disorganization. Viceversa, negative effects are produced by high population turnover, anonimity, limited acquaintance among neighbors, unsupervised teenage peer groups, weak organizational base, low participation in local activities. As a determinant of murder rates, social capital is about as important as poverty, urbanism, racial composition; more important than education level, rate of single-parent households, income

inequality.

Social capital (trusting networks and common values, community monitoring, socializing, mentoring and organizing) allows for the enforcement of positive standards for youths and offers them access to mentors, role models, educational sponsors, job contacts. It may also provide emotional and financial support, political leverage and volunteers for community institutions. By contrast, in the absence of positive norms, community associations, and informal adult friendship and kin networks, kids are left on their own and more prone to create their own social capital in the form of gangs or street groups. E.g. a study of Chicago neighborhoods found two most important characteristics to explain differences in risk of crime: mutual trust and altruism among neighbors, and their willingness to intervene when they see children misbehaving.

Family social capital has positive externalities: adults rear well-adjusted and well-behaved kids, increasing the pool of 'good peers' that other families' kids can befriend. Yet, if the neighborhood norms and networks are at odds with 'good' values, social integration has negative effects on the family.

At the individual level, social connections affect one's life chances: people who grow up in families with economically valuable social ties are more likely to succeed in the marketplace (not just because they tend to be richer and better educated, but also because of their connections - advice, job leads, strategic information, letters of recommendation). Ethnic networks as employment networks and source of financing. Frequency of church attendance is one of the strongest predictors of whether inner-city black youths will become gainfully employed: the religious beliefs have almost no impact, it is the social aspect of churchgoing that matters. Social capital is a powerful resource for achieving occupational advancement, social status and economic rewards.

At the neighborhood level, social capital is a marketable asset for homeowners.

At the local or regional level, there is evidence that social capital affects productivity and growth: industrial districts which allow for informational flows, mutual learning, economies of scale seems to do better (e.g. Silicon Valley - informal networks, repeated interactions, 'beers after work'). Social trust (towards employees or other market players) reduces costs of surveillance, compliance, insurance, legal services, enforcement.

Finally, increasingly stressed is the importance of social capital for economic development in less developed countries (cf. the World Bank web site), as well as the effects on public health and politics (as social capital reinforces the efficacy of democratic institutions).

Of all these relevant aspects of the issue, we will stress in this paper two

in particular: i) the socialization of the young generations through family and society; ii) the 'capital accumulation' aspect.

The objective is to analyze the dynamics of human and social capital accumulation through a process of modernization, trying to explain how the growth of human capital can be accompanied by a loss of social capital, and why some countries have been nevertheless successful while others have failed in the process. For this we are going to look at components of social capital specifically developed in rural, traditional economies, and their new role in urban environments when modernization develops. The pattern of family socialization before and after modernization attempts will be a crucial element in our analysis.

2 The model

Household preferences are described by

$U(c, w', x) = u(c) + v(w') + z(x)$

with $u' > 0, u'' < 0, v' > 0, v'' < 0, z' > 0, z'' < 0, u'(0) = v'(0) = \infty$, $z'(0)$ finite.

Consumption c (of market goods) is subject to the budget constraint:

$c = w(h, s, S)(1 - a)$

with real wage per hour w a function of individual human capital h, individual socialization s, aggregate (per capita) social capital S; $(1 - a)$ is the fraction of time allocated to work.

Household services x are provided by children's time e:

$x = 1 - e.$

Socialization of the young generation (cf. Bisin-Verdier 2001) follows the process:

$s' = \nu a + (1 - \delta)S$

with values in $[0, \bar{s}]$, i.e.

$s' = \min\{\nu a + (1 - \delta)S, \bar{s}\}$

(the influence of the social environment, represented by S, is a substitute for parental time invested a).

Human capital is determined by the technology (cf. Guaitoli 2000):

$h' = \theta e^{\beta} h^{\alpha} H^{1-\alpha}$

with values in $[\underline{h}, +\infty)$

i.e.

$h' = \max\{\theta e^{\beta} h^{\alpha} H^{1-\alpha}, \underline{h}\}$

We will consider two special cases of this model which we identify respectively with the traditional village economy and with the modern urban economy. The process of modernization, as an external exogenous shock, will move people in one generation from the village to the city (from the traditional to the modern sector).

In the 'village':

$w = w(s, S)$ with $\partial w/\partial s > 0$, $\partial w/\partial S > 0$, $\partial w/\partial h = 0$, concave

i.e. because of one-on-one personalized repeated interactions, the individual contribution to social capital is observed and partly internalized; on the other hand, the traditional production technology does not use human capital.

In the 'city':

$w = w(h, S)$ with $\partial w/\partial h > 0$, $\partial w/\partial S > 0$, $\partial w/\partial s = 0$, concave

i.e. because of mainly anonimous market interactions, the individual contribution to social capital is not observed, and not internalized (only the aggregate/per capita level affects wages); but the modern production technology uses human capital.

3 The village economy

Households solve the problem

$\max \;\; u(c) + v(w')$ s.t.

$c = w(s, S)(1 - a)$

$w' = w(s', S')$

$s' = \min\{\nu a + (1 - \delta)S, \bar{s}\}$

i.e.

$\max_a \; u[w(s, S)(1 - a)] + v[w'(\nu a + (1 - \delta)S, S')]$

(FOC)

$$\frac{dv}{dw'}\frac{\partial w'}{\partial s'}\nu \leq w(s, S)u'[w(s, S)(1 - a)]$$

The left-hand side (LHS) is finite, decreasing in a; the right-hand side (RHS) is increasing in a, going to infinity as a goes to 1. Hence for given (s, S, S') there is a unique solution $a \in [0, 1)$.

The LHS is decreasing in both S and S'; the RHS is increasing in S if the substitution effect dominates (independent of S with log utility, decreasing in S if the income effect is stronger). Hence, if the income effect is not too strong, a is decreasing in both S and S'.

The dynamics of S will be given by the following process:

$S' = \nu a(S, S') + (1 - \delta)S$

With $a = 0$, $S' = (1-\delta)S$. With $a > 0$, $S' > (1-\delta)S$. Differentiating

$$\left(1 - \nu\frac{\partial a}{\partial S'}\right)\frac{dS'}{dS} = (1-\delta) + \nu\frac{\partial a}{\partial S}$$

With a decreasing in S' and S, $dS'/dS < (1-\delta)$ at any S. Hence S' cuts the 45^o line only once, i.e. there exists a unique stationary value S^*. If the slope dS'/dS at S^* is positive, the steady state is stable.

< Figure 1 >

4 Modernization and the urban economy

In our simplified theoretical experiment, modernization is modelled as an exogenous shock moving people within one generation from the village to the city (from the traditional to the modern sector). After that, the household problem becomes:

$\max \;\; u(c) + v(w') + z(1-e)$ s.t.

$c = w(h, S)(1-a)$

$w' = w(h', S') = G(S')h'$

$s' = \min\{\nu a + (1-\delta)S, \bar{s}\}$

$h' = \max\{\theta e^{\beta} h^{\alpha} H^{1-\alpha}, \underline{h}\}$

Since w' does not depend on s' (only on a given S'), $a = 0$ (no investment in socialization) and $c = w(h, S)$ is predetermined. Then

$\max_e \; v[G(S')\theta e^{\beta} h^{\alpha} H^{1-\alpha}] + z(1-e)$

(FOC)

$$v'[G(S')\theta e^{\beta} h^{\alpha} H^{1-\alpha}]\beta e^{\beta-1} G(S')\theta h^{\alpha} H^{1-\alpha} \geq z'(1-e)$$

The LHS is decreasing in e, going to infinity as e goes to 0; the RHS is increasing in e, finite. Hence for given (h, H, S') there is a unique solution $e \in (0, 1]$.

If $v(w') = \log w'$, income and substitution effects are equal, and e is constant, independent of h, H and S'. Then human capital accumulation is independent of social capital (linear, with constant growth, if individuals are identical; it depends - negatively - on inequality if agents have different levels of human capital; cf. Guaitoli (2000)).

If the substitution effect dominates, the LHS is increasing in h, H, S', hence e is increasing in all three variables. Define $e(h, H, S') \equiv e^{\beta}$.

The dynamical system determining the evolution of H and S is given by:

$$H' = \max\{\theta e(H, S')H, \underline{H}\}$$

$$S' = (1 - \delta)S$$

For a given S' (in the first argument of the max):
$dH'/dH = \theta[e(H, S') + H(\partial e/\partial H)] > 0$ at any $H > 0$, $dH'/dH = 0$ at $H = 0$, $dH'/dH = \theta$ at any H large enough so that $e = 1$.

H' is a convex function of H up to some level, then it becomes linear. At any H, H' is increasing in S'. Hence as S declines, the curve shifts down, until $S = 0$. There is a possible poverty trap with a larger basin of attraction as S decreases.

< Figure 2 >

If at $S = 0$ the H' function (taking into account $\underline{H}$) intersects twice the 45^o line, the two stationary points are $\underline{H}$ and, say, H^*. In the (H, S) space, the locus of points where H is stationary has a branch decreasing in S from H^* to $\underline{H}$ and a branch coinciding with the level $\underline{H}$, up to the level of S such that $\theta e(\underline{H}, S)\underline{H} = \underline{H}$. For higher levels of S, H is always increasing. There will be a manifold starting at H^* for $S = 0$, always between H^* and the stationary locus for H, decreasing with S (continuity etc.), which separates a region of initial conditions for which we have persistent growth in the long run from another region of initial conditions where we cannot escape the poverty trap.

Notice that there is also a subset of this last region where initially the economy may grow, but eventually growth slows down and turns into decline.

< Figure 3 >

As we can see, during the process of modernization, as people move from the village to the city (from the traditional to the modern sector), they stop investing in social capital, while they start investing in human capital.

In order to have a successful result in terms of persistent growth, H must grow fast enough to offset the negative effects of a declining S.

The results are not changed qualitatively if we include a preference for s' in the utility function: households will invest a positive amount in social capital even in the urban environment, but with the opportunity cost increasing with human capital, social capital will still decline, and a region of poverty trap will still exist.

Thus we can essentially capture the two stylized facts that we mentioned earlier: that the growth of human capital can be accompanied by a loss of social capital, and that some countries may be successful while others fail in the modernization attempt.

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