DEPARTMENT OF ECONOMICS

Working Paper

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AN ESSAY ON A CONCEPT
LINKING THE SOCIAL SCIENCES

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Is Social Capital an Effective Smoke Condenser?

An Essay on a Concept Linking the Social Sciences

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Abstract: *Social capital is defined as mutual trust. It is related to production by a key hypothesis: social capital determines how easily people work together. An easy-to-use proxy (Putnam's Instrument) is the density of voluntary organizations. Social capital might be a new production factor which must be added to human and physical capital, or it might enter as a reduction in either transaction or monitoring costs. A direct and an indirect way to measure social capital are discussed. The crucial question is if social capital can be changed. That is, if self enforcement can replace third party enforcement, and it is discussed how much harm totalitarian regimes do to social capital, when they expand their area of central control.*

Keywords: Social capital, trust, transaction and monitoring costs, third-party enforcement, transition from socialism. Jel.: A12, C71, D23, D70

The purpose of this essay is threefold: (P1) to sharpen a vague concept into something well defined and measurable at the micro level. Further, we discuss how it might be aggregated to the macro level. (P2) Next, we want to show that social capital is a potentially powerful tool at the macro level and likely to be a useful instrument at the micro level. Finally, we discuss the crucial policy question: (P3) How can social capital be built? That is, how can the national and international authorities induce people to trust each other and work together voluntarily? In particular, how is it possible to reward this kind of behavior in transition economies where the need for economic growth is critical?

It should be mentioned that we have - already - presented the paper to several audiences and

1. We gratefully acknowledge financial support from the IBRD for this project. Also, we have learned a great deal from the other participants in the ongoing IBRD project on social capital, and from the workshop in the Bank organized by Ismail Serageldin. Peter Nannestad, Thierry van Bastelaer and Christiaan Grootaert gave many constructive comments to earlier versions of the paper. Section III.3 was greatly improved by comments from Claus Vastrup. Further, we are grateful to the staff at IRIS, who have provided good comments, and to the discussants when we presented the paper at seminars in Bangor, Wales, in Aarhus and at the University of Iowa. Finally, we have learned from Jesper Kammersgaard and Ravi Christensen writing their theses in this field.

discussed it with many colleagues. There is one comment we always get. It goes like this: Oh yes, but this was already discussed in the ZZ-literature, though with a different name and a slightly different slant. Each time ZZ has been different. We could easily have increased the reference list several times. So, there is an incredible amount of smoke smelling of something like social capital.[2] We do concur with the old saying that smoke is an indicator - and the family of social-capital-like concepts is a field with very much smoke. The big promise of social capital is that it may work as a smoke condenser, turning at least some of the smoke into matter. Pursuing these questions, we deal with the three broad issues mentioned in a gradually more speculative manner:

(P1) Sections I and III[3] discuss how the concept of social capital should be defined and measured - here our aim is to be fairly concrete. At present measurement consists of unsystematic bits and pieces of evidence from many sources using different definitions, and from studies using different macro-proxies. This does allow us to speculate as we shall do especially in (P3); but there is still a long way to go before these speculations can be systematically confirmed.

(P2) Section II presents three alternative approaches to building social capital into theory - showing that it might play an important role. Due to the state of data we limit ourselves to sketch potential roles and models. Basically we discuss how a social capital variable will fit into formal theory, and what types of questions it is likely to be able to answer. We show that social capital can enter in various ways, and that potentially it can answer important questions. Whether social capital will in fact live up to its potential is an empirical matter, well into the future, when systematic data have been collected and analyzed.

(P3) Section IV on social capital building discusses the *basic policy dilemma* of social capital. It is self enforcement *contrary* to third-party enforcement. Governments and international organizations are third parties. They may aim at increasing social capital, but their interference might do more harm than help to social capital. Here we are still less concrete and mainly argue by considering examples using our impressions of what the evidence might have been, given that social capital had been measured. The last of our examples is given a whole section: Section V considers the slowness of the East European transition after 1989. We argue that it is caused by the systematic eradication of social capital under the old totalitarian system by massive central controls.

Section VI summarizes the discussion.

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2. Also, in the same vein: In economic development there is a lot statements that what really matters is »culture«. Many, who comment upon unexplained differences between the development of country X and Y end up saying that it can be or has to be explained by differences in »culture«. Some look wise and profound when they say so, while others lift their hands in despair when they resort to the last and cheapest of explanations. For it is a sad fact that those who have tried to formalize and measure »culture« into one (or a few) operational concepts have been rather unsuccessful. It is beautiful mirage, which turns into smoke, when one tries to get hold of it.

3. Note that Section III on measurement (P1) is placed after Section II on theory (P2). Normally theory and measurement develop in a simultaneous way. Theory suggests what to measure, but once it is measured theory changes, this in its turn make new suggestions about measurement, etc. However, after some development has taken place, it is easier to give a systematic exposition starting with theory.

I. Making sense of a family of concepts

A perusal of the references given quickly shows that social capital is a vague concept with different definitions. We shall use the trust-definition in Table 1. It stresses that the concept has a basic micro interpretation, and that it can be aggregated to the macro. The aggregation is likely to suffer from most of the usual aggregation problems. Social capital is (potentially) important economically for the reason given as the key hypothesis in the second line of the table. Note that the key hypothesis might not be true, or might be a necessary condition only. Further, the table lists a practical instrument which may be used as a proxy for social capital. If it turns out to be a good proxy, social capital might be a simple matter to measure compared to many other statistics routinely published.

Table 1. Our definition of social capital, Ω, a key hypothesis and the operational proxy, Π

Definition Ω: The level of mutual trust existing in a group which might be extended to the whole of the society. **Key hypothesis**: **Ω** determines how easily people work together.
Proxy Π: The density of voluntary organizations in the society. The proxy will be referred to as *Putnam's Instrument*.

It is important to stress two limitations right from the start:

(L1) Little *systematic quantitative* evidence has been collected on social capital.[4] We are hence into speculation and conjectures - thus the word »essay« in the title. However, much is known on seemingly relevant matters allowing us to suggest how a theory may be built.

(L2) Social capital might be relevant for the development of the arts, religion and culture in general - our modest aim is to discuss social capital only to the extent it is *relevant for production*.

A part of the literature deals with the impact of social-capital-like macro proxies. Here, many variables have been tried with mixed success. Some of the more successful are »reverse« proxies (measuring lack of social capital) as the crime rate (see Fukuyama, 1995a) and various proxies for the »degree of civic mindedness« (see Knack & Keefer, 1997). We shall not - at present - discuss these results as we think we are still missing good measurement for more »theory-close« variables for making decisive tests.

I.1 A look at the family of concepts

The term »social capital« was probably introduced - as defined in Table 1 - by the sociologist James Coleman in 1988.[5] Later the same term has been used by several political scientists - notably Putnam (1993) and Fukuyama (1995) - similar concepts are also found in economics, though mostly with different names.[6]

4. See, however, Woolcock (1998) and Grootaert (1996). Furthermore, 12 projects on defining, monitoring and measuring social capital have been initiated by the World Bank (1998).

5. However, Bourdieu & Passeron (1970) used a concept of *cultural capital* in a related sense, when analyzing the process of learning, and later *social capital* (see Loury, 1977, and Bourdieu, 1984, 1986) as a generalized concept of the goodwill/credibility of the individual.

6. The confusion is thus double: related, though different, concepts have the same name, and also different names. The

It is clearly attractive to have a concept termed social capital. It is a bit like the name everybody uses for his favorite uncle - unfortunately different people have different uncles.

Coleman defined social capital as »the ability of people to work together for common purposes in groups and organizations.« (Coleman, 1988; p95). Cooperation is seen as voluntary »self enforced« by people *themselves*. This is contrary to »involuntary cooperation« enforced by *third parties*. The ability to *cooperate* voluntarily depends, in turn, on the degree to which communities share norms and values and are able to subordinate individual interests to those of the group. Out of such shared values comes *trust* - the concept used by both Fukyama (1995a & b) and - in an ambitious attempt to build a formal »economic« theory - by Dasgupta (1998). A set of similar concepts are used under different names as covered in Table 2 in other parts of economic and management theory. Also, related concepts are found in the other social sciences.

Table 2. Theories closely related to social capital

Management: Theories dealing with **goodwill**. The investment-like costs of building goodwill. Its value as a factor of production. It can be lost very quickly.
Macro policy-making: Theories dealing with **credibility**. The investment-like costs of its accumulation. Its value for improvement of the efficiency of policy-making, especially as regards monetary policy and exchange rate management. It can be lost very quickly.
Game theory: Theories dealing with processes to uphold **cooperative** solutions, when they are not the equilibrium of the game. That is, side payments, tit-for-tat strategies in repeated games and third part enforcement.
Anthropology, psychology: Theories dealing with the development of **group norms**. How they emerge and change.

On the micro level trust is the *mutual expectation* that arises within a community of regular, cooperative behavior, based on commonly shared norms. In this way, acceptable behavior is disciplined by reinforcing encounters in game situations. Social norms can be based on *religious or justice values*, but they also cover *secular norms like professional standards and codes of behavior*. Norms are created and transmitted through *cultural* mechanisms.[7] The word »*culture*« itself suggests that the ethical rules by which people live are nurtured trough repetition, tradition, and example. Many different theories recognize that there are advantages - also for the individual - in deviating from narrow norms of short-run maximizing. Firms are keen protecting their goodwill as it is an asset for the firm.

Some social scientists (eg Lewin, 1991) see such cases as being *the* key deviation from the *economic man model* - ie *the* explanation why the »narrow« economic model is false. This is surely misleading. The key point is precisely that the said behavior is an advantage for the individual, and hence it should be included in any reasonable textbook on the economic man model (that is, microeconomics),

confusion exists even within the same field, but when social scientists from different tribes communicate on the matter, it is hard to prevent some double Dutch from cluttering the discussion.

7. The word »culture« signifies that we are potentially dealing with very broad and complex issues. We have cut away much by the limitation (L2) at the end of the last section. That is, »our« social capital should be relevant for production.

though not in the first chapter. Table 2 lists theories rationalizing this behavior. However, there is a limit to rationality, as will be further discussed in IV.4.[8]

We do not want to include everything listed in Table 2 in our definition. What we want to include is something measuring the »ease of cooperation« at the micro level. The key idea is thus that a level of *mutual trust* exists in a society, and that this level differs from one society to another as well as over time.

It is not easy to measure the level of trust directly as discussed in III.3. When traveling we have all experienced parts of a picture that varies widely across countries. Car radios provide a typical observation. In some countries people carry their car radios with them when leaving their cars. Countries where this is necessary tend to be those where many agreements need witnesses and signatures in the office of some official, also they are the countries where simple operations in banks need documents in several copies with control-signatures, etc. In short, here *transaction costs* are high due to lack of trust between people. A main reason to be interested in social capital is that a group with members that trust each other can accomplish more - also economically - than a similar group without trust. In this way, Coleman has suggested that social capital is a new *production factor* which must be added to the conventional concepts of physical and human capital.

Putnam (1993) is an empirical study providing a wealth of interesting observations from Italian regions - showing a strong and very persistent pattern of differences in »social organization« and in income. The theoretical discussion argues that the pattern can be understood using the concept of *social capital*. Putnam uses the *density of voluntary organizations* (see III.4 below) as a proxy for the whole complex of differences. The idea is not, of course, that economic development is enhanced when people meet to sing or play football, but the density of clubs and associations are an indication of the state of society in the relevant sense. If people can work together in one field, may be they also can in another. That organizations are voluntary indicates that trust exists. There are hence a *crucial difference* to non-voluntary organizations, where cooperation is enforced by some outside - third party - authority.

We have hence argued for Table 1. We have a *definition* of Ω (from Fukuyama, Dasgupta and others), a *key hypothesis* (from Coleman) suggesting why Ω matters, and an *operational proxy* - Putnam's Instrument, Π - allowing us to imagine that something close to Ω can be measured.[9]

I.2 Long roots: social contract, third party enforcement and transaction costs

While the term social capital is new, the underlying ideas go back to a long way in the social sciences.

The importance of shared values and a social contract was already emphasized by Rousseau (1762). With a compressed version of his own words: People is never corrupted and has a good will, but it is often

8. The other social sciences used to claim only the land beyond the pale of rationality, but the imperialistic adventure of economics has moved the pale so far into sociology and politology that these tribes are now quickly embracing rationality, as their own long lost brother now happily rediscovered. The concept of social capital is partly another attempt to extend rationality. However, there are still mysterious ways of social capital building. A prophet may come along and establish credibility by a couple of miracles. He then convinces people that they go straight to hell - or are reborn as maggots - if they do not trust and help their fellow man.

9. We assume that the proxy, Π, is scaled to be of the same size as the theoretical concept, Ω. That is, we measure the two concepts so that the expected value $E(\Pi) = \Omega$. That is, $\Pi + u = \Omega$, where u is a noise term. We further say that Π is a »good« proxy for Ω, if the expected numerical value of u is »small« relative to Ω.

deceived. Therefore, the original life in nature was harmonic and peaceful. The problem is that people has been removed from the state of nature. (See Rousseau, 1993:203).[10]

Max Weber (1904) also emphasized the importance of culture. Here, trust grew out of religious habit. For example, the early puritans developed shared values which glorified hard work, thrift and honesty. These values were instrumental to the accumulation of capital and capitalism.

This is in stark contrast to the view of Hobbes (1651) who offers the reverse solution: third party enforcement. Because even the weakest member in society is capable of killing the strongest, a social contract is needed. This contract is enforced by the totalitarian king »Leviathan« who protects people against each other. If there were no common power to restrain individuals, no law and no law-enforcement, every man would constantly be open to violent invasion of his life and property. Anarchy means »…continuall feare, and danger of violent death; And the life of man, solitary, poore, nasty, brutish, and short.« (See Hobbes, 1985:186).[11]

Mancur Olson (1965) - and most of the public choice literature - starts the analysis of group behaviour from a Hobbesian view of human nature. If the risk of detection (and the cost associated with punishment) is lower than the benefits of committing a crime, then a person will commit the crime. So in the absence of police and court systems (with no or only low risk of detection and punishment), anarchy will prevail. Even the most just man will turn into the most cynical criminal and will kill and rob whenever it pays.[12]

Trust and self-enforcement may be important to economic growth because trust lowers transaction costs. When trust is present, the number of transactions that must be enforced by a third party is reduced. More transactions can take place at a lower cost and trust will increase predictability and production in society.[13]

Coase (1960) argued that, in the absence of transaction costs, it is sufficient to define and enforce property rights. A socially efficient outcome will occur, independent of the way rights are distributed. That

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10. Similar ideas are found already in Aristotle, observing the Greek polis, founded this way of viewing man's behavior as social and pursuing common interest in the 4th century B.C. Another well-known example is that of Karl Marx' class theory in which all individuals, due to class, voluntarily organize to act in their common interests. Very Rousseau-like ideas are also found in the *Arusha Declaration* of 1967, defining the ideology of the ruling party of Tanzania - parts of the story told in IV.1 can be seen as an attempt to return to the original state.

11. Adam Smith argued in this line that man is a rational utility maximizer and pursues private interests in contrast to common interests: »it is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest« (Smith [1776] 1991:13).

12. When criminals are organized and institutionalized into gangs, such as the mafia, it may pay them to protect their victims and steal through taxation or illegal business (drug trade, prostitution) rather than to kill and confiscate. This would be the case if the capitalized value of tax revenues is higher than the value of the confiscated goods. See Olson (1993), Becker (1996) and Svendsen (1998b).

13. Other writers, as Oliver Williamson, have emphasized the role of formal institutions in reducing »transaction costs« (the costs of monitoring and enforcing agreements). But still coercive enforcement is expensive and makes society more costly. Kenneth Arrow has said that every commercial transaction has an element of trust. In the absence of trust, as Antonio Genovesi puts it, »there can be no certainty in contracts and hence no force to the laws«. Then only »savages« would be around, »who will only give with the right hand if they simultaneously receive with the left« (Putnam 1993:166). Impartial enforcement is itself a public good. What power can ensure that the sovereign will not »defect«? Those who run the state may use the force in their own interest at the expense of the rest of society.

is, in the relationship between a farmer and a rancher, the one who is liable will build the fence; or in the relationship between a polluter and a victim, the one who is liable will pay the abatement costs. Typically when only two persons are involved and property rights are defined, transaction costs are low. If the number of people involved is raised, transaction costs will be high and an optimal outcome may not occur. It is then difficult for the involved parties to reach an agreement.[14] For example, it may be argued that a firm lowers transaction costs by having numerous informal transactions taking place which are not formally sanctioned. It is not necessary to monitor and enforce all transactions (see Coase, 1937).

Because trust assures you that another individual will not take advantage of you even if he might get an economic net benefit from doing it, self-enforcement is possible. Even if it pays to commit crime, free-ride or ignore the rules in a contract, fewer will do it in the presence of trust! (Putnam, 1993: 173).[15] A high level of trust causes a low level of transaction costs, eventually giving significant benefits to everybody. By this an informal agreement is accomplished where the only sanction is that of social ostracism.[16]

In general, self-enforcement must be easier to establish in smaller than in larger groups. Small, close-knit communities with regular face-to-face interaction may establish trust and intimate familiarity.[17] Large and more complex settings would require a more impersonal or indirect form of trust. Eg Mexico City would require more complex networks of mutual trust must be woven together. Often, members must trust in the trust of others. Here, social networks may allow trust to become transitive and spread: I trust you, because I trust her and she assures me that she trusts you.[18] Therefore, a crucial issue would be to avoid the groups from growing bigger if these social pressures are to be maintained.

II. Three alternative approaches: Production, transaction and monitoring

The purpose of this section is to present three approaches that give different formulations and a different theory-building strategy. The term social *capital* suggests that Ω is a capital like any other capital - and hence that we have to use a *production function* approach. Section II.1 discusses what it means to be a capital. It is also possible that Ω is rather a factor that determines *transaction costs*. This suggests a different formulation more like the transaction approach to the demand for money. The two formulations are contrasted in II.2. However, there is a third possibility discussed in II.3. It is the idea that Ω concerns *monitoring costs* - they occur to prevent group members from free riding. The proper theory analyzing free

14. David Hume (1739) was probably the first to demonstrate the presence of transaction costs in his classic example of draining a swamp. He says that it is indeed impossible that a thousand persons, in contrast to two persons, should agree on any such action, »it being difficult for them to concert so complicated a design, and still more difficult for them to execute it; while each seeks a pretext to free himself of the trouble and expense, and would lay the whole burden on others« (Hume, 1984: 590).

15. See Becker (1996) and Shapiro and Green (1994) for further discussions on unstable preferences.

16. Note also that trust is a *public* good, unlike human and physical capital which are (often) private goods.

17. Ostrom (1990) lists a number of small-group attempts to manage common-pool resources all over the world. The most important ones are grazing grounds, water supplies and fisheries.

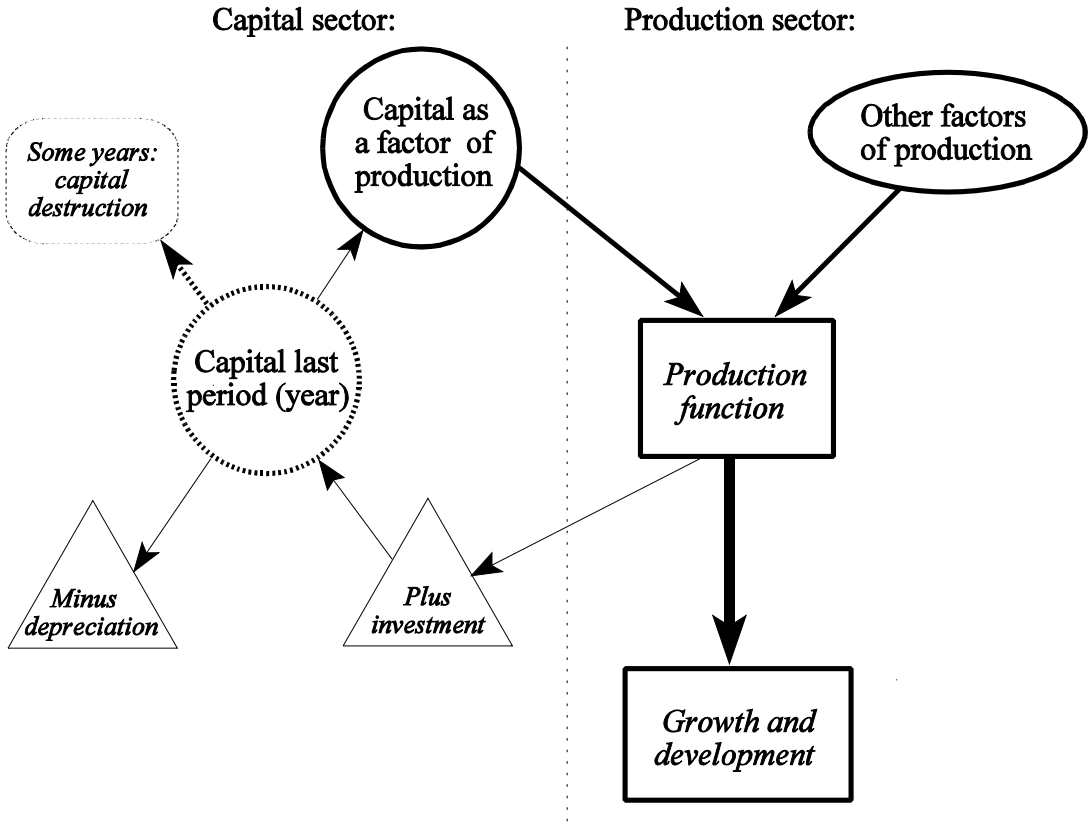
18. Similarly, an expanding mafia leader chooses would-be participants with care; it gets harder and harder to ensure trust and loyalty, the bigger his organization gets.

riding is game theory. We shall use the three alternatives to sketch a few possible lines of theory-building. It is probably not very fruitful to go too far in either of the three directions without a more solid empirical basis.

II.1 The idea that social capital is a capital

It is easy to see why the idea that Ω is a capital has a nice ring to it. The marriage between »social« and »capital« is appealing - then you have physical capital, human capital and social capital.[19]

Figure 1. The logic of any »capital« as production factor.



For a concept to be a *capital* it has to be a stock in a *stock-flow* context, as drawn on Figure 1. The flows - as production - are marked in *italic*. Some of this flow is accumulated - invested - and hereby becomes a stock - ie, a capital, marked with normal text. That is, in the long run the stock is endogenous. In the short run the stock becomes (almost fully) exogenous (predetermined). Also, a capital can be used and even destroyed. Physical capital can be destroyed by eg bombs and earthquakes, However, capital can also become redundant by a technological breakthrough or a change in tastes. The reader will see that these characteristics apply to physical capital, and to human capital. They also apply to financial capital - and, in fact - to goodwill and credibility in the theories listed in Table 2.

The question is if they apply to social capital. Casual observation suggests that social capital does

19. One may also add *natural capital* for the stock of natural resources. It is not a produced capital, but it depreciates by use and might be destroyed. Note that it increased by new discoveries and technical progress.

accumulate and decumulate as a capital, and also it can be destroyed. One can also argue that it is a factor of production. The weak link is the way it is »produced«. Physical capital is produced by the investment industry. In most cases it is easy to see what is going on here, though there are cases where it is difficult to draw the line between consumption and investment. In the same way human capital is produced by the education sector. However, it appears that social capital is rarely produced in a deliberate way.[20] At present, we hardly know how it is produced - it comes about through activities with another purpose. There is thus an »externality« character of social capital, as discussed by Collier (1998). Here a great deal of studies are needed.

Also Putnam (1993) himself makes it doubtful if the capital analogy is relevant, by his claim that we are dealing with social *processes lasting centuries*. One of his main points is that the history of the North Italian City-states of the Renaissance versus the centralized Neapolitan Kingdom from the 11th to the 19th century was decisive for the large difference between the social capital of North and South he observed in the 1980s.[21] If this is true, the annual flows must be infinitesimal relative to the stock. It is thus far-fetched to speak of a capital. We should rather treat Ω as an *exogenous background variable*, like language and climate.

However, we also note that eg many development agencies do spend money under such heading as »*institution building*« (see IV.3). These posts might be seen as deliberate expenditures aimed at building social capital. For example, attempts have been made to build co-operative movements, as discussed in IV.1. Such efforts often fail, but when they succeed, they clearly cause social capital building. Thus there is an activity that tries to build social capital *deliberately*, even if it is a slow process. A rural saving banks system may develop over a couple of decades, and in its turn it may lead to other such systems, but then we are speaking of half a century. Also, it is surely easier to make a system savings banks in a society where a network of football clubs already exists, and where, consequently, some people are known as trustworthy.

II.2 Is Ω a factor of production or a transaction costs factor?

Let us assume that we have a good proxy Q≈ Ω that provides data for social capital. Our Q may and may not be Putnam's Instrument, Π. When we speculate about the way Q should relate to aggregate production, Y, the obvious idea is to start from well tested standard formulations. One may either use a production function approach or a transaction approach.

Consider first a production function with labor, L, physical capital, K, human capital, H, and technical progress, indicated as a time index t on F. A huge literature deals with the production function. We shall stick to a simple basic form written as (1).

$$Y = F_t(K, L, H) \qquad (1)$$

How should Q enter into the function? The term »capital« in the concept of social capital suggests that Q

20. One part of human capital is produced as learning by doing. It is a fairly close parallel to social capital in the sense of being a byproduct accumulated by activities serving another purpose. Note, however, that the learning-by-doing component of human capital tends to be disregarded in empirical studies.

21. This brings us back to the »cultural« theories. We know that civic norms and religious beliefs change very slowly.

(and hence Ω) should enter as a production factor like the other »capitals« K and H. That means:

$$Y = F_t(K, L, H, Q), \text{ where } \partial Y/\partial Q > 0, \text{ and } \partial^2 Y/\partial Q^2 < 0 \quad (2)$$

(2) is not the right formulation if Ω is a factor affecting *transaction costs*. They are likely to be *proportional to the number of transactions*, and hence to Y. The parallel would here be to the transaction-part of the money demand relation rather than to the production function. That suggests formulation (3).

$$Y = \varphi(Q)F_t(K, L, H), \text{ where } \partial Y/\partial Q > 0 \quad (3)$$

Formulation (3) boils down to the wonderfully simple point that Ω is a scaling function for production. One could choose a scale for Q, where Q and Y becomes proportional. If social capital grows by 10%, so does production. Note that if formulation (3) is the proper one, it does not matter if Ω is a »capital«.

II.3 Social capital as a monitoring cost factor

Social capital might also be seen as self-monitoring and hence as a background factor reducing monitoring costs. This is easy to formulate in the language of game theory: Game theory considers the conditions under which games end up in Nash-equilibria. The most famous of games - the prisoner's dilemma - is repeated in Table 3.[22]

Table 3. The good old prisoner's dilemma game

		Player B	
		Stay silent	Confess
Player A	Stay silent	(a) {-2, -2}	(b) {-4, -1}
	Confess	(d) {-1, -4}	(c) {-3, -3}

Here the cooperative solution (a) is better for the two players than the Nash equilibrium (c) where the game ends if they play rationally, as each gains by free riding. That is, if the other keeps trust, and he does not. One may get from (c) to (a) if the two players trust each other sufficiently, or if a third party - such as the rest of the gang - punish the player(s) confessing. Many studies analyze the amount of free riding actually occurring - both in actual cases and in experiments. It appears that the cooperative solution occurs much more often than predicted by rationality.[23]

Our interpretation is now that the background variable determining how much the cooperative

22. The story tells of a gang of two criminals in custody, isolated from each other. They are being interrogated one at a time. They get the smallest joint sentence if both say nothing, but for each the second best is to confess while the other keeps silent. If he do not trust the other, he confesses. The {}-brackets give the pay-offs for the two players, with A first.

23. That is, when people are placed in a game situation, where standard (Hobbesian) theory predict a certain amount of free riding the empirics consistently show that the amount is less. See eg the survey of the results found in experimental economics by Schram (1998).

solution is preferred is social capital. We hence suggest that a connection as given in Equation (4) exists between the frequency of cooperative - trusting - plays, Ψ, in prisoner's dilemma games, and social capital, Ω, at any given level of third-party enforcement:

$$\Psi = \Psi(\Omega), \text{ where } \partial\Psi/\partial\Omega > 0 \qquad (4)$$

This approach suggests that one could perhaps develop a technique analyzing Ω by the methods of experimental economics, by studying how often people - in a group - plays the cooperative solution in certain well defined prisoner's dilemma game. We do know respected scientists, who believe that such an approach is well within reach. However, before we are so far, many studies are necessary.

Given that the monitoring costs approach works, the next problem is to connect monitoring costs to other relevant matters. When production has to be organized, many instances occur where some process has to be monitored. The microeconomics of monitoring is complex as monitoring techniques differ. It is often possible to organize physical production in lines, where monitoring is relatively easy, but many of the services and managerial parts of the production are difficult to monitor. Here the temptation to free ride is considerable, and monitoring is expensive. Also, it seems that with low values of Ω, some types of organization become impossible, so there may be non-linearities involved. However, it is possible that aggregate monitoring costs are simpler. They may even be proportional to production Y, so the monitoring costs approach may eventually give the same formal aggregate outcome as the transaction costs approach.

Section III.5 further discusses the possibility that the process of social capital building has the character of a repeated game with learning. Such games are likely to have one or at most a couple of equilibria. That is the process may cause Ω to converge to one or a couple of Ω*s. They would give a simple underlying *quasi-static* structure to the theory.

Once we have enough data for Q, we can determine if (2) or (3) is the better formulation and whether equilibria exist. However, till then we shall assume that (2) is better than (3). The discussion till now has shown that many insightful researchers have had a hunch that something which might meaningfully be called social capital exists. We have further argued for a definition, a key hypothesis of relevance and one operational proxy. However, we do not have actual numbers available - without numbers hunches remain a vague smoke.

III. Measuring social capital: the micro and the macro level

It is important that theorists think hard about the structure and character of Ω. However, while theorists think, it is crucial that measurement goes on. So III.1 contemplates the minimum conditions for social capital to be a useful concept. Then we consider two sampling methods to measure social capital. Sub-section III.2 discusses some joint problems and the aggregation problem. III.3 looks at a direct measure of Ω based on a loan question, while III.4 considers Putnam's Instrument, Π. Sub-section III.5 contains reflections - leading back to Section II - on the likely findings from both measurement methods.

Section II.3 above suggests a third possible way to measure social capital. This is by studies revealing how often people play cooperative in prisoner's dilemma games. One could imagine that the experimental techniques became so developed that it became possible to put an experimental lab on a van, drive into a location and start running a set of experiments with a sample of the local population. After n experiments the estimate of Ω stabilizes on the screen, and that is it - the van can drive to the next location!

This might be no further into the future[24] than the methods discussed in III.3 & 4.

III.1 A minimalistic approach: How much do we need to get started?

However, while theorists think, even a minimal variable, Q, pertaining to Ω is still useful, given that Q meets the three minimum conditions of Table 4.

The reader will see that the conditions - notably A - can be meet better. That is, if Q_1 and Q_2 both meet the minimum conditions, we may demonstrate that Q_1 or Q_2 or some composite $Q_3 = f(Q_1, Q_2)$ meet the conditions better. Hence, if we can find one Q_1 that meets the minimum conditions of Table 4, we have a *useful* starting point. Any theoretical or practical advance in our understanding of Ω, can then be used to improve Q. It is an old experience that once theorists are chopping into a concept from one end, and practitioners from the other end - and they occasionally talk - things develop much quicker than if the work goes on from one end only. Condition A was already discussed - as (L1) - in Section I, but the other two conditions are new.

Table 4. The three minimum conditions for a measure Q for social capital Ω

A.	Q should be relevant for production.
B.	Q should be different from what we already measure.
C.	Q should be theoretically linked to Ω.

Re B: different: Some of the aspects of human behavior that is termed Ω in macro studies (as Fukuyama, 1995) appear to be aspects we already know and study. That is, Ω may include measures of human capital, democracy, good governance, political stability, gender relations, the crime rate, etc. If social capital contains nothing, we do not use already, we hardly need the concept, except as an aggregation device. The big promise of social capital is that it is something different. Suppose we did know the true Ω, and it turned out to be almost, but not fully, collinear with other variables, we already know. We would then be interested only in the (small) component of Ω that is different from - at best: orthogonal to - everything else we are measuring.

Re C: operational: Many economic variables have been refined and developed so that they are measurable and organizations have been set up collecting and processing the data. Maybe the same will eventually happen to social capital. However, for anybody to want starting on such a process, it needs to be demonstrated that at least one proxy - Q - matters for production. Hence, we need a simple proxy from which to start our quest. The methods most likely to be applicable are the sampling methods to which we now turn.

III.2 Measurement by sampling individual social capitals. Areas, groups and the national level

The next two subsection consider two *polling methods* to measure social capital:

(a) *The direct method* can be made in many *variants*, which are qualitatively similar but quantitatively

24. We have been told that such experiments are actually being well under way.

different. Each variant gives a different number, and hence a calibration problem.

(b) *Putnam's instrument* is a parallel method that is qualitatively different from the direct method. It can be controlled by a *double bookkeeping* technique, and leads to one number only.

The idea behind both methods is thus to consider the population in an *area* A with i = 1, ..., N people. Assume that each person has a *personal social capital*: ω_i.[25] The social capital of A - that is Ω_A - is the average of the N personal ω_i's in A. We thus assume that the ω_i's in A have a distribution - Φ_A - with a well-defined average $\alpha_A \approx \Omega_A$. The ideal is that the Φ_A-distribution is normal and has a small variance. However, Φ_A may not be so simple - then α_A becomes one of the interesting properties of the Φ_A-distribution only.

This rises the question about the *structure of social capital*. Maybe the distribution has several peaks corresponding to something known about the population. Perhaps it consists of two tribes with significantly different Φ's. That is, $A = A_1 + A_2$, where $\alpha_{A1} \neq \alpha_{A2}$, and we thus get $\Omega_{A1} \neq \Omega_{A2}$. The *tribe-specific social capital* would thus be different. This would surely be an interesting fact to know about the area. There are many such possibilities. It is thus very likely that a study of Φ_A would yield (much) more interesting information than the plain average. It would be an interesting job to make a program screening a sample of answers for interesting properties as regards the distribution.

We can study Φ_A by well known sampling techniques once we have a sampling question (or method) X. Using X we get an estimate $F_A(X)$ of Φ_A. There are now three problems:

(i) The usual ones of *sample size and stratification* - these questions will not be discussed.

(ii) The one of *calibration*. We want eventually to measure Ω on the same scale, so that, if we say that the social capital in a village is 3.25, we know, what it *means*. The scaling of the $F_A(X)$ reached depends upon X, so we want a conversion from $F_A(X)$ to the Φ_A-scale, we understand. That conversion, Z, is called a calibration of X. Our estimate of Φ_A is hence $Z_X(F_A(X))$.

(ii) The *robustness* question. That is, by using different X's can we get the same Φ_A and hence the same Ω? In other words, is there a well-understood structure in the Z_X-calibration functions for a wide range of X's? We obviously want our Φ_A's to be robust. If the Φ_A's found by different - but reasonable methods - are too different, we say, that social capital is a fragile concept.

There is nothing in the argument above saying that the area A cannot be the whole country. Though the larger and less homogeneous A is, the more likely it is that there are *aggregation problems*. That is, the larger A becomes the more likely it is to contain groups with significantly different within-group trust, and very much lower between-group trust. That would mean two things: (1) the average would be less interesting relative to the other structural features of the distribution. (2) the average would be a poor measure of the social capital of any small area.

One particular problem could be that the trust in the government and trust among people might develop quite differently. So it may be necessary to single out the trust in the government as a particular variable. However, we normally think of trust among people as *the* social capital.

A good *national measurement* of Ω, must thus build upon a stratified sampling covering all possibly different national areas and all clearly discernable groups in the country - in a large and

25. The reader may here recall the reference to Bourdieu (1984), operating also with personal social capitals.

inhomogeneous country that would demand a very large sample size. However, once the national structure in Φ is known, it will be possible to predict and interpret results from small areas in a much more meaningful way.

As argued in the introduction to Section I it is possible that once we have a set of macro-Ω's they can be shown to correspond to other - more easily accessible data - such as a (weighted) average of the crime rate, the female enrollment rate in secondary education, the number of military coups, etc. It would be an interesting finding, allowing us to get a quick fix on social capital, but it appears a bit premature to assume that such relationships exist.

III.3 The hard way: Measuring Ω directly using the loan question

The most direct measure of trust seen from the point of view of a simple minded economist would appear to be a *loan question* of the following types:

> *Consider the circle of the m = 100 people (outside close family) you know best. How many in this circle would you trust with a personal loan amounting to n = 5% of your income?*
>
> *Or: Consider the circle of the m = 100 people (outside close family) you know best. How many in this circle would trust you with a personal loan amounting to n = 5% of your income?*

How this question can be formulated to work in an actual interview will not be discussed, but it is clearly a difficult matter as it taps into a *subjective assessment* of the respondent - hence the second formulation might be the better one.[26] Each choice of (n, m) gives a variant of the method, and produces a different answer. Let us imagine a choice is made, the polling is done, and that we have obtained a distribution $F_A(n,m)$ for the area A, and then a proper calibration, $Z_{n,m}$, gives us our estimate of Φ_A and Ω as discussed.

A key question is if the structure in the answers is robust - in the sense defined above - to variation in the two parameters n and m. If that is the case, the method provides a good measure of Ω. However, if the method has no robustness to the (n, m)-choice, the very concept of social capital would appear to be fragile.

A thorough study of Ω using the direct method is thus a large undertaking. When it is done a number of times, it will become easier, but it will take considerable efforts to turn it into a quick and easy method.

Finally, our discussion of loans raises a tantalizing possibility for finding an easy proxy for social capital. One may get a handle on Ω by asking banks about their lending policies, notably their loans to huseholds. Maybe the fraction of such loans, which are given without collateral, could provide a good macro-proxy for social capital.

III.4 The quick and easy way: reading Putnam's Instrument

Putnam's Π is the density of voluntary organizations. It might be polled exactly as the loan question to obtain a Φ_A-distribution. However, the question is much easier to pose, and a check is built in, so one needs

26. This is surely a type of question where it is very difficult to obtain true answers. The reader may also consider the wallet test - how many lost wallets are given back to the owner? This fraction is known to differ from almost 1 in Singapore to almost zero in many other places.

a much smaller sample, and, finally, it tries to catch *one number* that has an *objective existence*.

Let us once again consider area A with i = 1, ... , N people, where person i is a member of $n_i \geq 0$ organizations. We want to know the density of voluntary organizations of any type.[27] Imagine there are j = 1, ..., M such organizations, each having m_j members. The density is defined in two ways as:

$$\Pi = \sum_N n_j/N = \sum_M m_i/N \qquad (5)$$

The measure Π can be estimated in the same two ways - so that we have the »double bookkeeping« quality of a built-in check:

The N-count: asking a representative sample of people what organizations they belong to.
The M-count: identifying the organizations and asking each how many members it has.

If the two estimates give the same result, we know that we are on the right way. If they are different, they also provide information pertaining to type of errors made.

In both estimates there are likely to be problems catching everything. It is surely always a problem that some organizations have vague criteria for membership. Also, some keep membership a secret, either because it is an illegal organization or for some other reason. Masonic lodges take secrecy as an integral part of the mystique, while eg gay and lesbian societies want to protect their members. However, even if a few informal or secret organizations escape the net, it should - in a limited location - be reasonably easy to apply both methods and find a number that makes sense.

It has often been mentioned that the different types of organizations should be weighted differently. Some organizations (as criminal or tribe-chauvinist ones) should be given a negative weight. However they are typically among the secret organizations that will not be caught by such sampling methods as we discuss.

Imagine a polling organization which specializes in reading Π. It can thus field a team of experienced people who grew up in similar locations, and arrives with check-lists of possible organizations. A team of 4-5 people would probably need a couple of days only to make a reading of Π in an locality with, say 10,000 people. It would hence cost less than $ 1,000 in the typical LDC.[28]

In order to trust Π, one would have to make a dozen big detailed studies attempting to measure Ω directly, so that we can know how closely related the two measures are. If they are closely related, one can go ahead using Putnam's cheap and easy Instrument.

Finally a word of caution: Putnam's empirical claim is that Π is a variable that changes (very) slowly and predicts, (much) later changes in political and economic variables. This claim has been disputed, and the evidence is not as clear as one might like.[29]

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27. The voluntary organizations that Putnam (1993) refers to are the following: neighbourhood associations, choral societies, cooperatives, sports clubs, mass-based parties, tower societies, mutual aid societies, literary societies, guilds, unions.

28. In order for the process to be so easy the manual has to be written - this is well into the future.

29. Putnam's original evidence has been further explored in Helliwell & Putnam (1993), and by the 6 authors contributing to the special issue of the American Journal of Political Science 40 (3): 607-716. See also the negative outcome of the tests by Knack & Keefer (1997).

III.5 Pondering: How is the structure in the answers likely to look?

Let us imagine that we, by one method or the other, have found the true Φ_A-distribution of social capital in the homogeneous population of a certain area, and that this distribution has one well defined average, from which we can calculate Ω. If we contemplate the process of accumulation and decumulation of social capital a first question to ask is: Is it likely that equilibria exist for Ω?

If we consider the process as a repeated game, it is well known that they tend to converge to one - or at most a few - equilibria. Putnam argues that North and South Italy have converged to two different equilibria: $\Omega^{N*} > \Omega^{S*}$. If these states of Ω are both equilibria, and there are no equilibria between the two, then surely there is a pivot Ω^P between the two equilibria with the following properties:

$$\Omega^{N*} > \Omega^P > \Omega^{S*}, \text{ where all } \Omega > \Omega^P \text{ converges to } \Omega^{N*} \text{ and all } \Omega < \Omega^P \text{ converges to } \Omega^{S*} \qquad (6)$$

The new field of *evolutionary game theory*[30] - dealing with *repeated games with a learning process* - is pt being developed. Simple cases can here be solved for equilibria, and cases exist with several equilibria.

Perhaps they can even be present at the same time, as tribe-specific social capital is a likely result. Since Weber (1904) a tradition has existed for explaining the differences in success of different ethnic groups living in the same country to differences in ethics or culture. The popular version is that the xx-minority does so well because they »collude« against »us common folks«. If it can be shown that the different groups have significant differences in social capital that would give content - and operational substance - to such an idea. If there are dynamic processes leading to distinctly different equilibria, then it is easy to imagine interaction-processes in a two-tribe society that makes them converge to different equilibria.

The reader will already have seen that *if* the empirical study of social capital reaches the conclusion that the theory should be built along these lines, *then* we can soon leave speculation. We would be able to turn to the much easier endeavor of characterizing the games played and calculating their equilibria - which would define the quasi-statics of the theory. If there are few and well separated equilibria, it this could explains many observations, such as the difficulties the Italians have had closing the gap between North and South, the trouble of getting Africa started, etc.

We cannot know how powerful a tool social capital is before a great deal of such data has been collected. But it is surely not worth investing in its collection before one has a very solid hunch that it is an important variable. So there is some simultaneity in the development process of this concept, as there has been with many other new concepts.

IV. Changing social capital: the dilemma of third-party enforcement

Above we have argued that the process of institution building is related to the one of social capital building. Here outside support and third party enforcement often enter, but not necessarily constructively. Trust enters into the building of all institutions (and businesses). The many types of cooperative movements tried operates on (almost) pure trust. They hence form a particularly good study case - especially as they have a very mixed record. We shall also look at social capital and normal business and at social capital and institution building. Finally, we turn to the broader question of the nature of enforcement.

30. See Weibull (1995) for an attempt to summarize and develop the theory.

Here it is important to distinguish between two levels: an *active* and a *passive* level. Passive enforcement consists in building the legal and institutional framework allowing people to enjoy »law and order«. This is surely a precondition for having social capital. In the interest of brevity we shall not discuss the relation between passive enforcement and social capital. We concentrate on active enforcement, where third parties come in and »induce« - or even »force« - people to trust each other and work together. Sometimes governments even try to control or take over voluntary organizations.

IV.1 Cooperative movements: some cases

If social capital matters and concerns cooperation between people, it should be particularly relevant for cooperatives. This is certainly alleged by Putnam (1993, chpt 6). A large body of knowledge exists as regards cooperatives. The authors cannot claim great knowledge in the field, but we know some cases. One way to get into that literature is to take a quick look at a couple of cases:

A large growth wave occurred in Danish agriculture in the last 25 years of the 19th Century - about half a century after a big wave of land reforms that has created a whole new class of family farmers owning their land. A key factor in the expansion was the cooperative movement.[31] Between 1850 and 1900 a rather powerful co-operative movement arose in the agricultural sector in Denmark. The first area was the creation of many small local savings banks[32] - in the beginning they were not much bigger than most of the mini-credit schemes started in the LDCs. Later followed dairies, slaughterhouses, shops, etc. The co-operative movement was *fully voluntary* as it occurred while the government was in the hands of the last of the old landowners. They were engaged in a fierce constitutional fight with the farmers.[33] One may even see the building of the cooperative movement as a defense mechanism of the farmers against their enemy - the State. Even when the process is well documented, nobody has tried to express these experiences in quantitative social capital terms.

Contrast this story to the similarly well documented story of the cooperative movement in Tanzania in the last 50 years.[34] **(Step 1)** The movement started as a very modest voluntary movement in the colonial days. There were almost 2'000 cooperatives, owning trucks, chicken houses, grain and fertilizer storage and marketing, etc, in 1960, when Nyerere's government took over at independence. The cooperative movement was very much in accordance with the socialist ideology of the new regime. However, it was modest in size, concentrated in the most wealthy part of the country, and not spreading very fast.

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31. It is interesting to contemplate that Denmark was one of the most feudal societies in Europe in the 18th Century, with an income distribution that was probably much skewer than anything known in the world today. Danish economic history is written up mostly in Danish, but a survey in English is found in Paldam (1991).

32. The very first cooperative saving schemes were started already in the 1820s by idealistic big landowners of Holsten origin, who had read (in their native language) about such »banks«, which had been started in SW Germany. Basically these banks were circles of the most reliable people in the village. They met and received savings, which were at first invested by the landowner, but later they used the money to lend to other people in the village. Many of the new Micro Credit Programs use the similar, but contemporary, Grameen Bank in Bangladesh as the model.

33. Here the point about made in III.2 about a divergence between the trust among people and peoples trust in the government becomes pertinent. It appears that much the same difference might exist in various African countries - see Barkan & Holmquist (1989) for suggestive evidence.

34. Most of the documentation is found in reports from donor agencies. Paldam (1997a) gives references to published sources - and reports on a study tour covering the cooperative sector in Tanzania in the summer of 1996.

Table 5. A summary of lessons obtained from the study of cooperative movements

C1	**Bottom-up \ trust building:** cooperatives formed voluntarily based on risk sharing tend to grow slowly, but to have a long life
C2	**Top-down \ third party enforcement:** Cooperatives created from above can be build quickly, but tend to have a short life
C3	**External support:** External support to top-down cooperatives is a waste of money
C4	**Social capital suggestion:** It differs from location to location how easily cooperatives bloom. The difference might be due to initial differences in social capital

Thus, in the late 1960s the government launched **(Step 2)** a large cooperation movement (the Ujamaa-movement) in the countryside. It went very far and turned into a collectivization drive almost along classical soviet lines.[35] The new cooperative villages were to be the vanguard of socialism under the leadership of the party. By 1973 the movement was in deep trouble, but nevertheless the government outlawed the cooperatives of old voluntary movement. In the second half of the 1970s almost all Ujamaa villages were abandoned.

However, in the mid 1980s the Tanzanian government tried once more **(Step 3)**, to organize the farmers in a large-scale cooperative movement under the stewardship of the party. This time the cooperation should cover all services - that is provision of all outside farm inputs and handling and sale of all outputs - not the actual farming. Instead of the soviet-sounding rhetoric of the Step 2 movement, Step 3 used a Northwest-European sounding rhetoric. This had a very handsome pay off, in the form of development aid in the order of at least $150 million (in 1998-$) during the second half of the 1980s.[36] However, once burned, the farmers disliked the idea of cooperatives from above, and the movement rapidly used the aid and collapsed. In the mid 1990 nothing was left of the Step 3 cooperative movement. Now the old cooperatives of Step 1 are - once again - coming back, but in the summer of 1996 there were less cooperatives in Tanzania than in 1960. All the efforts and money spent had actually done harm to the very institution they were meant to develop.

Two stories are not, of course, enough for a generalization, but many more cases exist. It is hard to know everything, but it seems that the experience points to the general pattern given in Table 5. The two first lessons seem to be generally accepted, and also lesson C3 is well documented. It is not only in Tanzania that large amounts of development aid have been squandered on cooperatives projects. However there are a few nice stories as well - the Grameen Bank started as a bottom-up institution, but when it later received aid, it continued to grow,[37] and, in fact, a number of such stories can be told. So a 100% »hands off« approach is not necessarily the best one. Fortunately, the distance between giving gentle support to local initiative, already well under way, and a heavy handed external take-over, is a large one.

35. The parallel is striking, though perhaps not fully deliberate. For some years there were even forced collectivization in Tanzania, but the bloodshed was much more modest than in Russia in the late twenties.

36. In the second half of the 1990s the government of Tanzania and the donors try once again. **(Step 4)** is much more limited in scope. It is concentrated around an agricultural bank.

37. There are reports, however, that the external support has been excessive and a problem.

C4 is a suggestion only, but if social capital is a significant factor of production, it must surely be important here. With a large social capital »available« in the society it must be much easier to create a cooperative movement than with a small social capital. A full estimate of the micro-production function - taking social capital into account - is here likely to yield very useful trade-offs.

IV.2 Business and social capital: entrepreneurial skills vs social capital explanations

One of the explanations often given in development theory for the slow development of certain areas is the *lack of entrepreneurial skills*. This is frequently used as an explanation for the slow development of Africa.

However, anybody who has lived and traveled in Africa cannot have failed to encounter the typical African market teeming with entrepreneurial activity - in fact, there seems to be plenty of entrepreneurial skills and activity all over Africa.[38] The problem is rather that the African firm fails to grow past a rather modest *threshold*. It is possible that the threshold, few African firms manage to exceed, is the one where the owner gives an employee responsibility for decisions that can not be simultaneously monitored.[39] Hence, we could be dealing with a social capital question. To run a large business one has to rely on employees, running semi-independent parts of the company. This argument takes us back to the monitoring cost discussion of Section II.3. When there is very little social capital, monitoring costs are forbiddingly high.

We also note that many of the most successful larger firms in Africa are run by ethnic minorities, who reserve all managerial positions involving trust to group-members. The popular explanations given for the success of these groups are that they »stick together«, they »collude« against the common man, etc. In social capital terms that is that they have more (group-specific) social capital, than the rest of the population as already discussed in III.2 and 5.

Together these arguments suggest that Africa may be a continent with very low social capital[40] - this may provide the explanation for the lack of economic dynamism in spite of the abundant entrepreneurial spirit found throughout the continent.

The literature about management and the development of trusts in organizations can (no doubt) be developed to take existing background levels of social capital into consideration. The main point is here that everything enhancing cooperation and trust in a firm also adds to social capital in the area where the firm is located. Social capital here appears as a social *externality*, as discussed by Collier (1998).

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38. There is a very marked difference between the widespread entrepreneurial activity in (most of) Africa and in, eg, Greenland, where the economic system is strongly detrimental to all such activity, see Paldam (1997b).

39. Maybe the owner has a couple of brothers or sons whom he trusts, but the number of competent members of the close family determine the maximum size of the firm.

40. Paldam (1997a: 298-304) analyzing development projects t reports on a visit to a drinking water project in Africa, where the donor had paid the capital costs and tried to organize local committees responsible for the many individual sub-projects. We were got the impression that it was impossible for to get the local users to entrust the committees with money. However, the committees could get people to provide occasional free labor for maintenance - a joint activity where no trust was involved.

IV.3 Observing development projects - social capital as a devise for controlling costs[41]

Many studies of the success-rate of development projects show large *unexplained regional differences* (see the annual evaluation reports from OED-IBRD or Paldam, 1997a, cpht IV.1).

That is, regional differences still come out highly significant, even if all (other) measurable differences in background variables are controlled for. The total differences might be as large as 40% - if the success-rate is 70% in the best region it might be only 30% in the worst region. We may explain half of the gap of the 40 percentage points by differences in educational level, GDP per capita, growth rate, industrial structure, etc; but that still leaves half the gap - that is 20% (percentage points) unexplained).[42]

Most observers would probably agree that a good deal of the explanation is that the institutions necessary for obtaining project sustainability are (much) more difficult to build in some regions than in others. In other words, the costs specified as »institution building costs« (there are other similar terms), which are often found in project budgets, should be very different from one location to another.

Institution-building costs are often as much as 10% of project costs and might be even higher. We are thus speaking of amounts like $ 2.5 mill on a $ 25 mill project. The money pays for the training period, where expensive expatriate staff run the project, while local staff is trained to take over. Also, some local people are sent abroad for advanced training, etc. Some courses might have to be run in the surrounding villages, etc. Often it seems to be arbitrary if the institution building costs are set at 7%, 10% or even 12% of project cost. That is, in a $ 25 mill project these costs may differ by $ ½ mill for no good reason. If two teams plan the same project independently, these costs are likely to differ by such a sum. However, it is often a crucial post, as anybody observing development projects will have noticed.

That is, such decisions are often based on intuitions of project planners. Experienced planners can say something about the size of institution-building costs based on similar projects in similar locations. Such intuition is hard to document, and experiences might be with projects in areas that »look« similar, but are really quite different in the relevant field. So if a good method could be developed allowing a sound estimate of the »ease of institution-building« in a location, it would save a good deal of money.

Social capital as defined must be closely related to the ease of institution-building. That is, a low Ω in the project location means that it is difficult and expensive to build the institutions necessary to make the project sustainable. If there is plenty of social capital available, it is even possible that the project will spread once it is demonstrated how something might be done.

With enough data we can calculate cost functions, for the institution-building-costs, C_i, as a function of other project costs, C_o, project type, τ, and social capital, Ω, available at the project location:

$$C_i = C_i(C_o, \tau, \Omega), \text{ where } \partial C_i/\partial \Omega < 0 \qquad (7)$$

If Putnam's Instrument works and has been calibrated, as explained above, all that is needed for a sound cost estimate is a reading costing $ 1,000. This is surely a small sum when we are speaking of costs that (i) easily differ by $ ½ mill by a slight of hand, and (ii) which might be crucial for success and failure.

41. This section is based on Paldam (1997a) - a study of 37 development projects in 9 countries. The projects were visited and reassessed five years after they were declared completed and formally handed over to the donor country.

42. The main problem region is, of course, Africa. As we have already argued, there are many signs that social capital is very scarce in that region.

Social capital may therefore turn out to be an eminently practical matter.

IV.4 Carrots, sticks and social capital

The discussion above suggests that external support can easily become too much, and become counterproductive, actually destroying social capital.[43] This brings us back to the point made in the introduction and in II.3: Social capital is a measure of the capacity for self enforcement - or voluntary group enforcement - as contrasting to third party enforcement.

Up to a point it is surely cheaper if people themselves monitor and control each other. Some activities are very difficult to monitor. Without trust such activities can hardly be undertaken, and they may be important for development. However, discussions to make everybody agree also cost money, worker operated firms are not normally so efficient. We are surely dealing with complex trade-offs.

It is likely that the existence of adequate social capital does allow much better solutions to be found in nearly all types of institutions, even the strictest hierarchies. One of the most efficient of such organizations was the Prussian-German army in its heyday (1860-1916), as directed by its famous General Staff. It is well known that its main organizer and thinker General Moltke (the elder) placed great emphasis on the creation of trust among the top officers. Orders were orders up to a point. Then everybody had to take their own decisions imbued by a joint schooling and lots of esprit de corps (see Goerlitz, 1953, notably Chapter IV.II).

Putnam also points to the »stiffness« of hierarchy when explaining the difference in density of voluntary organizations. The North and South of Italy started on divergent paths back in the eleventh century when the South was subjected to a hierarchical Norman kingdom, which systematically reduced the amount of trust people could have to each others and to their leaders. Ordinary people and leaders were not interacting socially and voluntary organizations were regarded with distrust, so little social capital was built. So, the South experiences the Hobbesian outcome of amoral familism, clientelism, lawlessness, ineffective government, and economic stagnation (Putnam, 1993: 180-83). The solution would then be to scale down the role of hierarchical state intervention so to avoid this »southern deadlock« and thereby leave room for voluntary organizations (see Tanzi, 1996:176).

It is thus an important insight that social capital can be destroyed by too much enforcement. It is worth considering an extreme case.

V. Social capital in the former Soviet Block and the collapse

According to official ideology the main aim of the 70 years of the soviet system was to create *a new man* who was more social than capitalist man. The idea were that the new man would work better together with the members of his team than the individualistic capitalist man. Once the new man emerged, third-party enforcement would be unnecessary, and the state power would vanish. In the meantime the development went the other way: Large efforts were made to thoroughly organize and control the society - under the

43. This is a bit like the *paradox of gifts*: Once received they ought to be as good as any other income. Rationality demands that people look ahead, not back. However, we all know that people care much more about things that have been acquired by hard work.

historically and scientifically right leadership - and to root out the old civic society.[44]

V.1 A switch of terminology from ideology to social capital

In our terminology the main idea was to build social capital on a really large scale from the top down. In order to create the right kind of social capital all *voluntary* organizations were brought under the leadership and, in fact, control of the one and only party. So the old social capital - defined as in Table 1 - was destroyed. To this and other purposes, an extensive and very frightening control-system was created.[45]

Imperial Russia (before World War I) was neither as totalitarian nor as ruthless as the Soviet Union, but Russia of the Czars was surely an oppressive and centralized system[46] - in several ways not unlike the Kingdom of Naples before the Italian unification. Thus, communist societies had often weak civic traditions before the rule of Communism. However, many studies of the 70 years of the Soviet Union give an impression of a system which went unusually far in *destroying* social capital. After the Bolshevik Revolution in 1917 and Stalin's dictatorship from 1928-53, the Soviet Union became an extreme case of a »missing middle«. This situation corresponds to the historic »hourglass society« of South Italy, but it went much further. In the Soviet Union, the private sector and all non-party social structures were ruthlessly eliminated.

In fact, few activities were more dangerous in the Soviet Union than to organize anything on a voluntary basis - outside the party. Secret voluntary organizations as masonic lodges or ethnic organizations were strictly forbidden and severely punished. Also great efforts were made to root out independent initiative, and organize everybody. Even the boy scouts were replaced by party scouts (pioneers). All sports clubs etc were brought into the system. During the purges people thoroughly learned to *trust nobody*, and to restrict all activities to the (relatively) safe one of obeying orders.

The heavy state intervention in centrally planned economies meant that the state made almost all decisions and coerced people to do certain things. There was no room for entrepreneurship, experiments and voluntary organization into social groups. So by the time the system collapsed - 1988-92 - there was no social capital, with one exception:

Plans were cumbersome and slow to change, and there was a high pressure on top management to get the job done, even with a little bit of wheeling and dealing. So middlemen and fixers (known as »tolkachi«), were tolerated, even when they lived a precarious existence. However, as managers were high party officials, there were some protection of these small pieces of *grey networks*, as long as they remained small, informal and did not get into any kind of politics.

After the Second World War the Soviet system was transferred - by the Red Army - to a number

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44. Once more, we are dealing with a large literature. A fine synopsis of the official ideological handbooks from the 1950s and early 1960s has been published in Fleisher (1965).

45. Historians will probably discuss how many the system killed for a long time, but the range is between 10 and 20 mil, while 2-3 as many were jailed for non-criminal reasons, see Conquest (1968) for the standard estimate.

46. A main theme in the great Russian literature has always been the »Russian Soul« (national character), and how very much it differs from the one of the »West«. It is often alleged that the main difference is that the Russian needs and loves a »strong hand«, and can be ruled only by such a hand.

of neighboring countries.[47] Few questions were asked regarding their preferences, so they became deeply anti-soviet in the process. In the beginning the transfer was slavish, but gradually the countries were allowed to go more and more into directions of their own choice, which often involved the permission to run (small) private business and the acceptance of independent church organizations (notably in Poland). The result of these developments were remarkably corrupt societies, riddled with networks, but the destruction of *civic society* was never so thorough as in the Soviet Union. Especially in Poland, Czechoslovakia and Hungary a lot of the traditions of the old survived totalitarianism.

V.2 Collapse and the slow upturn

From the 1960s many partial reforms were tried to make the soviet system work better, but most of the reforms were half-heartedly carried out and absorbed by the system. However, as time passed the reforms efforts became more vigorous, and in the late 1980s they took a dramatic momentum of their own, resulting in a monumental collapse of the *political and economic systems* of the Soviet Union and its East European Empire. Hence the old social capital was much reduced - by the deliberate destruction - and the centrally created »social capital« crumbled.

When a country has to be rebuilt, social capital is crucial. In Germany after the utter defeat and large scale destruction of physical and human capital in 1945, the pre-Nazi political parties and organization came back at a remarkable speed. The Nazi regime did last a dozen years only, and even when it did much to destroy moral and social values, the process was of a short duration. Also, there was much to destroy. So after a decade (West) Germany was already well on its way to recuperation.

In the East-Block countries no physical and human capital was destroyed in 1990. But the new market economies are nevertheless doing quite poorly. The drop in real GDP was about 40% at its peak - in the mid 1990s, and today only Poland, the Czech Republic and Hungary are well under way.[48] It will take at least another decade for Russia to reach the pre-1990 income level, and in the meantime Russia has moved toward the position as one of the world's most corrupt societies.[49] Mafias are powerful as in the South of Italy, and politics take strange forms. The absence of trust and the rapid growth of the grey/black sector of corruption and crime worsened transition and created a truly Hobbesian anarchy.

If social capital is the glue holding together society in the absence of third party enforcement, a country without social capital will collapse dramatically if the enforcement system weakens, and it will be a slow proces to build new institutions. It seems that no better explanation exists neither for the size nor for the speed of the collapse that occurred in Russia around 1990. Also, our theory explains the slowness

47. The soviet take-over was mostly from regimes set up by the Nazis that had already destroyed a great deal of civic society.

48. A complex story might also be told of the late DDR. It turned out to be much more difficult and expensive to absorb into Germany than expected. The explanation given is normally the one of the bad competitiveness generated by the 1:1 exchange rate when the East-Marks were converted to West-Marks. However, the DDR system was one of the most totalitarian in the East Block, and it came on the top of the 12 years of the Nazi Regime, so perhaps the shortage of social capital should be considered as an alternative explanation.

49. See the index from Transparency International (1998), where Russia on a scale from 10 (clean) to 0 (highly corrupt) scored 2.27 points only. For comparison, the maximum reached is 9.94 for Denmark, while the USA scores 7.61 and the Czech Republic reaches 5.20.

of the recuperation.

V.3 The deep gloom of Putnam's perspective - end beyond

In his study Putnam repeatedly stresses the long time horizons necessary to build civic society - the Soviet experience can be seen to confirm this impression - also when it comes to the eradication of social capital. One can point out that short campaigns as the Cultural Revolution in China did not accomplish very much. The eradication has been most successful in Russia, where social capital was never very large, and where the totalitarian regime was strongest and lasted longest - it came to exceed the lifetime of all, but very few of the population.

Putnam's suggestion is that it takes a couple of centuries to build social capital - when starting from a really low level. Applying this perspective on the new Russia give predictions which are bleak indeed. It will take a long time before Russia can become a normal »civilized and wealthy« European society. Our analysis is bleak also, in suggesting that social capital building is a social process where the government can do little - in fact central interference in the process can do harm, especially as we understand too little of the process. There is little reason to believe that the Russian government is able to do much in a situation, where a light touch is necessary. However, there is one area, where the government can do a little: It can set a national example and provide legal frames.

Evidence suggests the possibility of good circles especially as regards trust in governments. That is, the government that privatizes and creates economic growth, does obtain increased credibility, making further development and reforms easier. Government credibility is low in Russia and high in the Czech Republic (see Gros & Steinherr (1995) and IBRD (1996)). However, it is hard to get started. Perhaps, the experiences so far point to two main possibilities. First, it appears that attempts to evade democratic elections has been rather demoralizing. Second, the slow and uncertain moves toward privatization has often made it easy for interest groups to block the privatization and the economic gains from auctioning off public assets and establishing private entrepreneurship. This has been damaging to economic growth because of extensive lobbyism, rent-seeking and state managers using this »window of opportunity« for stealing all assets in their firms.[50] Economic results may convince special interest groups and citizens that there is something in it for them.[51]

The use of markets and free-trade rather than centrally planned economy leaves room for beneficial voluntary organizations and entrepreneurship. This move also makes it harder for harmful rent-seeking interest groups to redistribute to themselves because definition and enforcement of property rights will be simple and clear-cut.[52]

VI. Concluding remarks - the dilemma of social capital

The first three theoretical sections dealt with the role of social capital for production and how social capital

50. Åslund (1995:311) and Svendsen (1997).

51. See Putnam (1996:180-83), Åslund (1995:309-11), IBRD (1996:94). Aldcroft & Morewood (1995) give historical accounts that show how economic decline in the former communist countries caused revolutions.

52. Olson (1982) argues how harmful, rent-seeking groups accumulate over time and destroys economic growth in society - several cases studies (as Svendsen, 1998b) have applied this framework.

could be measured. Section II showed that social capital might be relevant for production in three ways: (i) As a factor of production parallel with physical capital and human capital. The two other possibilities are both as a cost reduction device. That is, it might reduce either (ii) transaction costs or (ii) monitoring costs. Here, (ii) and (iii) might be formally similar in the aggregate, and might even take the character of a scaling factor for production. We also discussed the possibility that social capital is formed by processes with discrete equilibria - if that is the case, one may get very nice quasi-static properties of development models, once social capital is included. That is, one may get low and high growth equilibria.

Section III dealt with measurement. We first sketched a measurement technique derived from experimental economics: social capital might be measured by the frequency people play cooperative in prisoner's dilemma games. We then discussed a direct measure, using a *loan question* of the type: How many of the people, you know best, would you lend to or could you borrow from? Finally we turned to Putnam's instrument of the density of voluntary organizations. If social capital is as important as suggested, it would surely pay to experiment a lot with the three measurement techniques and establish their relative merits.

The next two sections, based on casual empirical evidence (in the absence of measurement), discussed how policies can change social capital. This is illustrated by examples. Section IV looked at micro credit schemes in Denmark and Tanzania. Another example dealt with the concept of »missing entrepreneurial skills« which in many cases could be confused with »low social capital«. The second formulation has rather different policy implications.

However, our main example was the one in Section V dealing with the former East-Block. We presented a story of a large-scale deliberate extermination of the »old« social capital. When the central enforcement apparatus crumbled in the late 1980s, new market economies appeared without the crucial component of social capital. This story is very powerful in explaining the size and the speed of the collapse on the one hand and the slow recuperation of the new economic systems on the other hand.

A key theme in the essay is the voluntary nature of social capital versus third party enforcement. Social capital is enforced by people themselves - by methods ranging from gentle pressures to social ostracism or even violence.[53] This finally brings us the question of policy. If social capital proves as important as some of our argument suggests, it would be great, if there was a policy increasing it. That is, if the government can do something helpful. However, we have also seen that there is a dilemma:

Social capital is self enforcement and thus contrary to third party enforcement. Attempts by third parties - as public authorities - to enforce social capital may thus be counterproductive.

We have seen several examples where this has clearly been the case, but we have also seen examples where government interference has helped - or at least not been harmful - to social capital. So perhaps there is a way, but till it is found, one can only advise caution when it comes to political interference into the process of social capital formation.

Finally, the above suggests that it is crucial that future research provides systematical measurement

53. Traditional Eskimo society had very little in the form of social superstructure, so no third party existed to enforce anything; but the society needed a lot of social capital to function. However, social ostracism was a mortal threat, and also it did happen that people, who broke the implicit or explicit rules of the society, did not return from a hunt.

and systematically compares the different methods, we have discussed, so that a scale for indicating social capital levels can be developed. When such measurement is available, the first key problem that should be addressed is the optimal mix between self (group) enforcement and third party enforcement

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