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Linking Economic and Social-Exchange Games: From the Community Norm to CSR

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Abstract: This paper proposes an analytical approach to the roles of social norm dealing with economic externalities. Traditionally social norms are treated by economists as external constraints or endogenous outcomes of repeated economic transactions. In contrast, this paper formulates a game of social exchanges and characterizes the role of social norm in regulating a game of economic transactions as equilibrium of linked games. Advantage of this approach is manifold: it can clarify conditions for social norm to regulate economic externalities when endogenous reputation mechanism fails as well as to facilitate, rather than deter, a change in economic institution. More specifically, it suggests a solution to the empirical paradox of why a corporate social responsibility program sometimes contributes to a better stock market performance of the corporate firm.

Keywords: social norm, social capital, linked games, corporate social responsibility (CSR)

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Why are corporations engaged in various non-economic activities to meet societal demands (such as environmental protection) beyond their legal obligations? In other words why do corporations "over-comply" (Heal 2005) with the social demands? Does it benefit corporations (their stockholders)? If so, how? Common-sense-wise an answer may appear obvious. However, it may not necessarily be so for the prevailing framework of economists' thinking: "corporations do not need to do anything beyond legal obligations in order to serve stockholders interests". The object of my talk is to suggest an analytical framework to challenge such view without abandoning a bounded-rationality postulate of agents concerned (various stakeholders of corporations as well as the citizens of the society). An essential idea is to endogenize the relevance of such social constructs as norms, status ascriptions, social capital (social-relational capital) and the like to economic behaviors within an expanded framework of game-theoretic thinking.

I begin with conceptualizing the social-exchange game analogous to, but distinct from, economic-transaction game. I then link both games to endogenously explain relevance of the said social constructs for sustaining, as well as transiting to, a certain mode of economic transactions not possible stand-alone. I illustrate arguments by parables drawn from a simple domain of the closed rural community to a domain of global commons where the so-called corporate social responsibility (CSR) programs can emerge as equilibrium strategies of corporations.

A Third Way to Approach Social Norms

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[1] This paper was originally read as an invited speech at the EconomEtica conference on *Social Capital, Corporate Social Responsibility and Sustainable Economic Development* held at the University of Trento in July 2007. I benefitted from conversations with Elinoir Ostrom, Geoffrey Heal and Lorenzo Sacconi to prepare this paper, but needless to say I am solely responsible for the contents and views expressed.

Traditionally there have been two major social-scientific approaches to social norms in relation to economic analysis. The first approach, which may be termed as the dichotomous view, is to treat social norms simply as irrelevant, or at most as exogenous, to economic analysis. In a seminal book published in 1947which set a conceptual and analytical framework of neoclassical economics for decades to come, Paul Samuelson haughtily claimed that "many economists would separate economics from sociology upon the basis of rational or irrational behavior" (1947, p. 90), implying that economics has nothing to do with such things as social norms. If not dismissed as irrational, following social norms are regarded by some as belonging to different categories of rationality than instrumental choices prevailing in economic actions.[2] In the last two decades or so when institutional economics has been re-emergent, social norms have started to be recognized as relevant to economic actions, but largely remains to be regarded as exogenous (given) to economic analysis (e.g., North 1990, Ostrom 2005). They are usually treated as exogenous constraints on economic choices or exogenous modifications of pay-off function. [3] But their origins are regarded as to be explained outside economics (possibly in sociology).

Oddly, however, not only in neo-classical economics but even in some once-influential sociological theories like the Parsonian paradigm, social values were treated as a quasi-exogenous entity waiting for being individually internalized through socialization process such as family rearing, formal education, religious teaching and the like. But a deeper and more meaningful approach could be to view social norms/customs and the like as endogenously generated and sustained through social interactions of people and to make the process as an analytical focus (e.g., phenomenological approach of Berger & Luckmann, 1967; new Institutional sociology by DiMaggio, Powell, 1991; and others) . This approach, which may be called the endogenous view, has an immediate analogue in economics. Kandori (1992) characterized the social norm as a sub-game-perfect equilibrium outcome of a bundle of trading games played by multiple traders. Traders of a community are sequentially matched pair-wise randomly to play a trading game of two-person prisoners' dilemma

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[2] For example Kant distinguished two reasons for rational action: hypothetical and categorical imperatives. The former is said to be induced by one's inclination, while the latter by the sense of one's duties. It is well known that Max Weber also distinguished two categories of rational action: Zweckrationalität (object-rationality) and Wertrationalität (value-rationality). The former is instrumental, while the latter is prescribed by some transcendent system of values.

[3] Such exogenous view is echoed by some philosophers like Searle (2006) who argued that "deontic power" prescribing peoples' duties, rights, obligations and the like precedes individual's desire-oriented choices. See also Heath (2001) on "deontic constraints", of which subtlety I will comment later.

type, but they are somehow informed of the record of past plays of successive trade partners so that they can collectively replicate the reputation mechanism as would be possible between particular two persons.[4] Social norm is then identified with collectively shared (equilibrium) beliefs regarding possible outcome (punishment) of "cheating", which would deter the actual play of cheating. Note however that in this approach the "social" norm is constructed within the domain of economic trading game itself. Punishment is exclusion from further trading in that domain. Greif's work on cultural beliefs as regulating possible dishonesty in long-distance trading among the Maghreb traders is constructed on the same spirit, although his work is subtle in viewing that players' beliefs regarding the consequence of off-the path-of-play sub-game (cheating) were formed as historical legacy (accordingly "cultural" beliefs). This rationalist construction of norms as shared beliefs is full of meaningful implications and the present paper will essentially follow this track. However, to regard social norms endogenously generated within economic-transaction domains in themselves raise some questions. For example, if players are not excludable from economic- transaction domains as in the case of commons, is it that social norm cannot evolve to deal with its possible "tragedy" a la Harding (i.e., over-exploitation)? Then, is it that a legal regulation is only a solution? When a group of people face a new mode of economic transaction, is it that old social norm bound to be doomed and play no role in the transition and thereafter?

In order to deal with these and other questions , this paper adopt a third way, which is to consider explicitly both the domain of economic-transaction game and the domain of social-exchange game and then to link the two. It may be said that it de-couple social and economic aspects of choices and then re-couple them. It assumes that the community of people repeatedly play both an economic-transaction game and a social-exchange game characterized by different instruments (action choices) and different intentions, but each player coordinates his/her own strategies across the two domains in an unified manner. By this way, some strategies which are not strategically viable in an economic-transaction game in isolation may become viable with the support of a certain mode of social interactions. It may be considered as a game-theoretic restatement of the notion of "social embeddedness" originating in the

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[4] Suppose that two traders mutually benefit from honest trading (i.e., delivery of goods promised and payment of promised price for it). However, both of them can potentially realize greater gains from cheating the other and inflicting damage on him/her. If the traders meet each other only once, then both of them may be afraid of being cheated so that mutually beneficial trading may not be realized. This is a typical case of Prisoner's Dilemma. However, if they are expected to repeatedly meet to trade, then both of them may refrain from cheating out of the fear that opportunities for beneficial future trading may be deprived if they cheat. See Fafchamps (2004) for an empirical application of this theory.

writing of the economic sociologist Granovetter (1985). But we try to go beyond his framework by considering dynamic "overlapping social embededdness" (Aoki 2001) of different modes of economic transaction, as well as feedback impacts of change in mode of economic transaction on social norm. Also Ostrom (2007) and Heath (2001) may be referred to as recent works dealing with relationships between social norm and economic choices (instrumental choices) in an integrated, quasi-game theoretic manner. [5]

Conceptualizing the Social-Exchange Game

Let us start out with conceptualizing the social-exchange game analogous to the economic transaction game, but made distinct from the latter particularly in terms of player's intention, technical rules of the game and possibly by instruments of play. Suppose there is *a community (group) of agents who interact with (relates to) each other using social symbols (such as words, gestures, gist-giving and the like) or actions (such as helping) with the intention of affecting emotional payoffs of targeted agents (as well as those of their own) and with unspecified obligations of reciprocity*. We call the set of such mutually interactive agents and the sets of their instruments as the domain of social-exchange and their interactions as play of the social-exchange game. A few words need to be said to distinguish it from other domains of game. [6]

First, although exchanges of social symbols (speech action) may be involved in other domains as well, those in the social-exchange domain are distinct by the nature of *unspecified reciprocity*. Any economic transaction can be essentially a contract

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[5] In Ostrom's Institutional Analysis and Development (IAD) framework (2005), the so-called "social dilemma" (equivalent to the Harding's tragedy of commons problem) is considered to be resolvable, among others, by individual internalization of norm. The norms are treated as exogenous parameters of preference functions of agents in the social-dilemma game. However, recently, they are interpreted as evolving as a response to the lawless "state of nature"(Ostrom 2007), although game-theoretic language is not explicitly used. The philosopher Heath (2001, pp.135-45) versed well with game theory also introduces the individual utility function composed of desired-based ranking of actions and categorical preferences (normative reason) of actions. Norms are then explained essentially as compromised solutions of non-strategic moral discourses among people (the axiomatic approach to Nash bargaining solution is alluded). Thus both instrumental choice and "deontic constraints" are regarded as involved in individual action, but they are treated as mutually distinctly determined. We will treat both conjointly.

[6] For a more elaborated classification of domains of societal games, see Aoki (2001), particularly chapter 1.

which cannot be implemented without specific mutually agreements, although they may be unilaterally or bilaterally defaulted. Political exchanges may also uses social symbols, but instruments used by the government (e.g., tax notices, court decisions, presidential speech, regulatory decrees, etc.,) and those by private agents (e.g., votes, protest meetings, briberies, etc.) are asymmetric in nature. A similar asymmetry may be found in the domain of organizational-exchanges. Second, the utterance of speech or dispatch of other social symbols in social exchanges may be generated by sender's own interests (e.g., self-satisfaction, release of anger, sense of security, empathy, togetherness, expression of jealousy, and so on), but their messages are intended to have impacts on receiver's emotional payoffs, either positive (e.g., pride, consolation, retribution, and so on) or negative (e.g., shame, regrets, feeling of excluded, and so on).[7] In that sense, they are distinct from mere speech or the so-called "cheap talk" in the "signaling game".

If one can expect to receive more positive (alternatively negative) signals from others in the social-exchange domain, it may be said that his/her social capital accumulates (alt. depreciates), because, as we will see gradually, they can be used as assets for further increasing emotional payoffs and deriving benefits in other domains (economic, political and organizational).[8] In order to accumulate social capital, however, one may need to reciprocate positive symbolic acts to others in the same domain or send positive signals in acting in other domains. We will provide more concrete examples below, but it may suffice to point out here that the basic features of social-exchanges as described above indicate the strategic nature of social-exchanges, as well as their possible linkages to actions in other domains. Agents exchange social symbols as they consider the most fit/desirable in order to increase, and to make the best use of, social capital in response to their imperfect knowledge

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[7] By emphasizing the impacts on relational others, speech act in the social-exchange domain may be considered as akin to "perlocutionary act" conceptualized by the linguistic philosopher Austin (1962).

[8] Notions of social capital as individual assets are also found in rational-choice sociology of Coleman (1990) and reflexive sociology of Bourdieu (1986) and differ from collective notions as advanced by Putnam (1993) and Hayami (2006). Putnam's social capital comes into being not through individual intentional action, but is said to be "inherited" with its origins hidden in the mist of the past. The existing stock cannot be thus individually owned, although can be "cultivated" through the collective practice of "gardening." A collectivist notion of social capital along the customary usage of the word "capital" in economics is articulated by Hayami as "the structure of informal social relationships conducive to developing cooperation among economic actors with the effects of increasing social product." Because of these two conflicting notions, our notion may be better termed as "individual social assets."

and beliefs regarding how the others would act and react.[9] In that sense, social-exchanges as described become the play of a game.[10] Thus we call the agents in this game as the players.

Players' knowledge/beliefs about the structure and internal state (choice profile) of the game can be different: some of them may have finer knowledge/beliefs in its certain aspects, but coarser one in other aspects. However, through repeated plays there may evolve a modicum of commonality of beliefs (as conceptualized as common knowledge) regarding ways by which the game is repeatedly played together such that everyone in the community knows it and knows that the others know it.[11] Then players would play with such shared beliefs as a guide/prescription, which in turn collectively reconfirms and reproduces such beliefs.[12] Those beliefs in the domain of social-exchanges are crystallized in such forms as norms, customs, status differentiation/ascriptions and the like depending on contexts, which regulate as well as enable the players to behave "socially properly". [13]

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[9] We only assume that agents have a consistent preference ordering of action choices given imperfect knowledge and beliefs regarding the structure and internal state of the game, but that they are not necessarily exclusively self-interested. See Aoki (2007).

[10] The game of culture may be conceptualized in an analogous way, but made distinct from social-exchange game in that social symbols are dispatched by players more diffusively in contest for some values. See Huizinga (1938) for a view of an essential element of cultural as the play of game. Also readers may recognize certain parallels between my concept of the domains of game and Bourdieu's concept of "fields of social relations (1981), as well as between our individualistic concepts of social capital (1986). Bourdieu even alluded to the game nature of the fields (Bourdieu and Wacquant 1992: pp. 98-101). However, Bourdieu's social capital is regarded as instruments of dominance over others, while mine is not necessarily limited as such as seen below.

[11] See Aoki (2007) for a rigorous conceptualization and the nature of common knowledge/shared beliefs regarding the internal state of game and conditions for them to exist.

[12] These belief structure y may be analogous to what some sociologists refer to as "socially-constructed-realities"(Berger and Luckman 1967)," taken-for-grantedness"(Zucker 1983; DiMaggio and Powel 1991),"schemata"(Fiske and Taylor 1991), "scripts"(Schank and Abelson, 1997) and so on.

[13] By an attempt to understand the nature of social norms on the basis of game theory, this paper shares the same spirit with the "rational construction of social norms" by Bicchieri (2006), although I do not assume players' complete knowledge and beliefs but common knowledge. See also Ullmanm-Margalit (1977) for a seminal game-theoretic treatment of social norm.

Linking the Commons Game and the Social-Exchange Game

Now let us link a social exchange game thus defined with an economic exchange game and see how something that cannot be explained in the latter alone become endogenously explainable by this way.[14] For this purpose I adopt a simple parable. Imagine a domain in which the community of agents uses commons in economically beneficially manner, but the maintenance of its values requires collective efforts. Assume further that it is not technically feasible to exclude any individual member of the community from using the commons so that there lays the potential problem of free-riding. For example, the remarkable growth of rice production in the Edo period (from the 17th to the 19th centuries) of Japan was largely owed to the continual land reclamation and the associated development of irrigation systems in the rural community. However, rice paddies cultivated by member families were mutually scattered and intermeshed due to the incremental land development by fairly homogenous member families, while the irrigation system was such that water drawn from a canal is successively supplied from one paddy field to the next using the natural slope (the gravity system). [15]

Under such conditions, the usual reputation mechanism to punish any member family who shirked in collective development and maintenance works was not just feasible. A solution for such problem suggested by economists would be to integrate rice paddies under a single private property rights to internalize externalities or to subject the management of the irrigation system to a centralized public control. However, there was no political power willing to grant and enforce integrated property rights or to wield the centralized control of the irrigation system in the Edo period. The political power of the load was limited to impose collective tax obligations on the rural community as a whole, of which members were rather egalitarian in paddy cultivation and decision-making rights, with no option to exit from the community. Under this situation, member families were engaged in a social-exchange game such as to reciprocate mutual helps in times of emergencies (e.g., fire, illness, birth, death) as well as to participate in collective symbolic/informative activities (e.g., festivities, wedding, daily gossiping, outing and so on). Member families derive utilities from participating in such activities with some costs to do so in terms of time, efforts, resources, psychological burdens, etc. Roughly speaking, the present value sum of net welfare for individual member families measured in terms of opportunity costs of rice production may then be

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[14] For a more detailed discussion of linked games and their applications to institutional issues, see Aoki (2001), particularly Chapters 2.2, 8.1-2, 10.1-2.

[15] See Aoki (2001) Chapter 2.2 for detailed descriptions regarding environmental and political conditions surrounding the rural management of irrigation system in Edo period and its game-theoretic analysis.

conceptualized as social capital possessed as individual assets. The exclusion of individuals from the said social exchanges implies the deprivation of such social capital, since they cannot be compensated elsewhere by exiting from the community.

Then, even though exclusion from the use of the commons is not technologically possible, shirking of collective efforts in developing and sustaining the commons may be punishable by exclusion from the benefits of social-exchange game, i.e., ostracism. Suppose that families follow the following strategy combinations, depending on specified contingencies: (1) Play "Shirk" in the irrigation game and "Do not participate" in the community social-exchange game if they have played "Shirk" in any previous commons game or they have been ever ostracized in the community social-exchange game. Otherwise they cooperate in both the irrigation and community social-exchange games; and (2) Exclude any other family, and only that family, who has ever shirked in the commons game from participating in the social-exchange game in all future years. Suppose that the belief of each family is such that almost all other families have played, and will play in the future, the strategy combination prescribed above.[16] It can then be proved that such beliefs can constitute a sub-game perfect equilibrium of the linked games under a mild condition[17] and, once selected at the community level, they can deter member families from actually shirking. Under normal circumstances only cooperative behavior among village families can be observed as a standard of behavior. We refer to such *a standard of cooperative behavior, supported by the empirical expectations of collective efforts and shared normative beliefs of social punishment of shirking as a community norm*.[18] It can be grasped theoretically as an endogenous outcome of linked games rather than an exogenous constraint (rules of the game) given from outside the socio-economic system. Once it is established evolutionarily under certain historical conditions, each player may neither calculate prescribed strategies from the scratch nor be aware of its rational property, collective or individual, however. They may be sometimes tempted to shirk, but be just frightened at the thought of what might happen if they actually do. Or, they may follow the standard of behavior just like a habit or as a disposition. Even if so, their behaviors and

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[16] Indeed, in the Edo period severe ostracism known as *Mura-hachibu* (80 percent exclusion from village collective social actions except for funeral services and fire fighting to prevent spread) was practiced against serious deviants. The exclusion of individuals from the said social exchanges implied the wholesale deprivation of social capital, since they cannot be compensated elsewhere by exiting from the community.

[17] It is important to prove that it is beneficial for the member families to socially ostracize anyone who shirks in the commons domain. It requires that the marginal contribution of any single individual member to social capital accumulations of other members is small.

[18] Bicchieri [2006] provides a similar "rational reconstruction" of social norms (p.11) although not in terms of linked games.

beliefs can be reproduced and guide their further behavior because there is neither better reason nor benefit to act otherwise under unchanged conditions.

As I pointed out in (2001), various conditions are necessary for such specific kind of community norm to evolve and become self-enforcing – such as historical, political and natural conditions for members families to have become relatively homogenous in terms of cultivation rights and internal political decision-making, the consequential unanimity of interests in sanctioning deviants in the use of the commons, no-exit option from the community and repeated plays therein. Identifying these conditions may help clarify the role of norm in sustaining a certain specific economic order but not in others, as well as provide a clue for understanding why other solutions, such as the integration of ownership to internalize externalities, could emerge elsewhere. In the following I try to relax the assumptions of homogeneity, static plays, and no-exists in turn.

Heterogeneity of Players and Ascriptions of Differential Social Capital

The above example is built on rather simple conditions and its implications are intuitively straightforward. But essentially similar mechanisms may be feasible under different conditions. Suppose, for example, the players' skills in collective production are of different level, but their (marginal) contributions to collective outputs cannot be measured precisely because of the team property of production *a la* Alchian and Demsetz. Under such condition, even if the distribution of outputs is made in a rather compressed way, the more able player may be compensated by the ascription of higher social capital as represented by high esteem and respects from fellow workers. However, whether such mechanism of status differentiation can really contribute to the incentives of the able and the control of free-riding of the less able may depend on the intensity of social interactions among the players, while the intensity of social interactions may in turn depend on mode of collective production. For example, ambiguous demarcation of jobs (e.g., mutual help, ad hocish back-up arrangement in emergencies), on- and off-the-job teaching-learning, and the like, on one hand, and the social exchanges of team-spirit-intensifying messages (e.g., praise, encouragement, togetherness) on the other, may not only be linked strategically but also complementary with each other in terms of productivity and emotional satisfactions. [19]

Turning to the modern civic society, we recognize that citizens are increasingly heterogeneous in wealth, occupations, educational and cultural backgrounds and so on, while becoming increasingly mobile across communities. Thus, it may appear at first

[19] An interesting comparative study of fishery villages by Plateau and Seki (2001) may be referred to on this theme.

that social relationships have lost regulatory power in the provision of public goods. Yet, there seem to have emerged growing awareness that non-governmental organizations, voluntary associations, professional communities and the like can play important roles in the provision of, and suasion of needs for, public goods such as natural environments, public safety, poverty and disaster reliefs, technological innovation and transfer, etc. For example, take open source software (OSS). They are public goods *par excellence* in the cyberspace because they provide basic infrastructure for internet communications as well as the basis and elements for further development of programming. They are distributed free with open source codes and are continually being improved through the participation of many programmers from all over the world via e-mail communications. As a result, OSS has become a much more stable and reliable software than commercially licensed software protected by compiled object codes. As legal protection of software invention would eminently retard the development of communication technology, participating programmers may be driven to improve on the software they themselves use, but they may also derive non-pecuniary rewards for their contributions similar to those ascribed to eminent academic scholars (e.g., the recognition and esteem paid by peer engineers), even though the accumulation of such social capital can also be complementary to career opportunities (e.g., easier access to venture capital funds).

The traditional economist's view was to regard quasi-market arrangements (e.g., intellectual property rights, emission taxes) and the government as substitutes with each other in charge of public goods. There was no recognition of the role of intermediate associations in the highly developed market economy. However, partly from the rising ease of communications facilitating the formation of cross-border communities of various interests and partly due to the increasing cognizance of citizens' responsibility, voluntary associations are becoming progressively active and influential. Thus, the generation of unique intangible social capital for members (e.g., sharing of values, professional ego/pride satisfaction, esprit de corps, etc.) bound by common concerns, interests, and causes may become instrumental for nurturing civic norms and professional values conducive to the provision of various public goods in non-governmental and diverse manners. Thus we see the generic relevance of "social embeddedness" of the commons domain even in the contemporary context. I will come back to this point later and relate it to the discussion of the role of CSR.

Social Norms May Matter in Institutional Transition

The second endogenous view of social norms by economists alluded to in the beginning of this paper – that is, identifying social norms with reputation mechanisms in the economic domain itself – implies that norms emerge and disappear with relevant modes of economic transactions. Looking at the same thing from a different angle, one may say that the inherent inertia of social norm is in general detrimental to the emergence of new mode of economic transaction. Greif's seminal historical comparative institutional analysis (1993, 2006) provided one instance for an answer to be affirmative. Cultural beliefs among the Maghreb traders that dishonest trading would be punished by ostracism from their community could not be shared by outsiders so that they failed to expand the orbit of their trading beyond their internal reach. It is claimed that this was a major reason for them to eventually lose competitiveness in long-distance trading in spite of their possible internal efficiency vis-a-vis the Genoese traders who relied on efficiency wage discipline on recruits of agents from market. We may then ask: were pre-market community norm needed to be destroyed prior to market transition and replaced by entirely new market mores? How could the latter emerge? Traditional views, whether those of economists (e.g., Hicks 1969) or scholars in other social science disciplines such as economic anthropology (e.g., K.Polanyi 1944; Geertz 1963) have drawn a sharp line between the market economy and the pre-modern economy for entertaining such a view. However, recently a revisionist view has emerged which contends that the rural community bound by cooperative norms could play a positive role in facilitating the gradual transition of pre-modern rural economies to market economies under certain circumstances (Aoki and Hayami 2000). The complete destruction of rural communities may be neither sufficient nor necessary for the emergence of external market relationships and eventual integration into the market economy. In other words, under certain conditions the presence of community relationships may be complementary to, rather than a substitute for, the emergence of market relationships with outsiders without third-party involvement in contract-enforcement. What are those conditions? Let me provide again a parable drawn from the history of the second-half of Edo period in Japan as an illustration, hoping that more general implications of the roles of norms in institutional transition may be inferred from it.

In the rural community as discussed above where a norm based on the homogeneity of members prevails, opportunities for mutually beneficial, intra-community material trading were severely limited. However, as the productivity of agricultural crops gradually rose through the improvement of indigenous technology, the potential for surplus products and working time beyond the subsistence level and tax obligations gradually expanded. In order to exploit gains from such potential, the community needed to open up trade with outsiders. Suppose that a merchant who resided in a (castle) town remote from the village arrived. Since village families could offer only more or less homogenous goods, they were mutually substitutes as trading partners to the merchant. Therefore, if the merchant were able to trade with them individually, he might possibly prey some families and then switch to other families to gain from further cheating. However, the merchant would be compelled to believe that such opportunities were shunned. This belief would be derived from the presumed ability of the village community to punish any member of the community who would defect from boycotting trade with a dishonest merchant. On the other hand, the merchant would threaten that if any commodity were not exchanged honestly he would terminate trade with them and tell his story to all his fellow merchants back in the city. If the future value of trading was assessed by the village members as better than no-exchange option, even if individual temptations to cheat vis-a-vis a single merchant were high, peer pressure could persuade them not to jeopardize future trading opportunities. For example, if any family delivered defective products, the defector could easily be spotted by other village members and accused in a manner reminiscent of the community norm. Thus, the vesting of social capital with village families would provide a foundation for them to initiate exchange with outside merchants and enforce honest trading on both sides without third-party involvement.

As productivity differentials in cash crops or craft production widened and their products became gradually specialized, community cohesion among the villagers was bound to start eroding. Option values from outside exchange increased for more entrepreneurial village families, while social slack from the community social-exchanges start to decline for them. By then, outside merchants also became more knowledgeable about the traits and capabilities of some individual families in the village. The outside merchant and village families initiated individual putting-out contracting, e.g., for the supply of craft products such as textile yarn and fabrics. Furthermore successful entrepreneurial families would start organizing subcontracting relationships with less enterprising families. In this way, trade relationships first induced by the presence of a community norm started to destroy the relative homogeneity of the village community, thus encroaching upon the social basis of the community norm. The community norm, based on the symmetric ability of community members to punish a possible deviant in the social exchange game, needed then to be succeeded by personal trust and/or traders' community norms based on their ability to identify and punish an individual deviant in the economic-transaction domain itself. But information networks necessary for sustaining such mechanisms would have been partially prepared within the community prior to, and in the transition to, such relationships.[20]

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[20] Although the parable above was constructed as a sequel to the preceding irrigation story and thus is meant to reflect some historical reality in the late Edo period, similar parable can be narrated with respect to other communities as well. For example, Hayami and Kawagoe (1993) challenged a famous anthropological thesis by Geertz (1963) that entrepreneurship for modernizing non-farm business activities cannot emerge endogenously from within the village. They looked at emerging Indonesian vegetable markets in which village-based traders acted as intermediaries, delivering the produce to towns. In order for this operation to be effective, credits must have been advanced by the traders in exchange for the promised amount of daily supplies of crops by villagers, which potentially created moral hazard problems. However, community norms -- not a legal system -- enforced these contracts and countervailed against the temptation of farmers to cheat. Further, traders were compelled to give farmers a fair price, since there was symmetric information in the

Another interesting case for a collective norm to help a transition to a new institutional set-up may be found in the emergence of the so-called "industrial districts" in Italy. It emerged after highly integrated textile companies failed to survive because of high wages and labor disputes in the 1960s, and finally the highly protective Workers' Statute adopted in 1970. Skilled workers released from large companies were encouraged to establish their own enterprises, often by purchasing equipments from large companies that were closing (Barca *et al* 1999). The types of transactions and coordination that quickly developed among their small firms, such as the reciprocity of subcontracting and sharing of productivity-enhancing knowledge, would not have been feasible without mutual trust as an essential governance mechanism. They became possible because the transaction domain was embedded in a pre-existing social exchange domain in which the new owners of those small firms had invested a significant amount of social capital as the members of the civic community and/or labor organizations which confronted the old integrated companies (Dei Ottati 1994). This is an instance of overlapping social embeddedness, i.e., possible replication/transplant of a norm developed in one domain onto a different domain.

Also a claim is often made that the group norm prevailing on the shop floor and in the internal business organization of the Japanese firm most typically found in the period of high growth is a replication of the community norm from the pre-market economy as discussed above (e.g., Hayami 1998). The historical process of such transplant, if any, was neither straightforward nor consciously designed, on which I will not dwell upon here (see Aoki 2001, Chapter X), but touch upon one speculative point which may be suggested by the process. In the economic-transaction domain, individual choices are relatively more easily susceptible to entrepreneurial design, conscious transplant and so on in comparison to the social-exchange domain in which choices may be more inertial. Such design/transplant may not immediately yield a stable outcome by standing alone, however. In order for stable outcome to evolve out of it, it may need some kind of anchoring. A deep-seated, social-exchange heritage may be called for to meet this need. However, a replication of social norm may not be straightforward because equilibrium outcome ought to be generated by linked plays of economic-transaction game of a new form (in terms of a set of players, their possible choices and so on). Norm cannot be simply imposed exogenously nor transplanted as

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village on market prices. Thus, community norm facilitated the transition of the rural community to external market relationships.

have existed elsewhere. It needs to be recreated through everyday plays, although it reflects a deep generic structure of the society transmitted through historical process.[21]

How Do Stock Market Assess Corporate Social Capital and CRS?

I finally would like to remark on implications of above arguments to the issue of corporate social responsibility (CSR). A relevant question may be framed as: Should corporate firms be regarded as nothing but entities solely engaged in economic transactions in product, capital and labor markets? Or is there any point to regard them as engaged, or ought to be engaged, in some kind of social exchanges with the society of citizens at large beyond their own markets? By posing questions in this way I set aside from my immediate concern such matters as corporate brand names embodying accumulated reputations in relevant markets (in terms of product qualities, after-purchase services, delivery timing and the like). Costly signaling (such as advertisement) which would not directly affect utilities of buyers may also be left outside the scope of our discussion (although advertisement may promote the so-called conspicuous consumptions). I do not mean that brand names and advertisement are not important for understanding social implications of corporate behavior. Certainly they are. The point is that the nature and roles of corporate reputation, signaling and the like operating within specific markets of relevance have been extensively analyzed and fairly well understood in economics. I am concerned with whether or not corporate firms accumulate own social capital, as distinct from market-specific reputation capital? The conceptual distinction between market-specific reputation capital and corporate social capital beyond specific markets is crucial, although distinction is sometimes subtle and ambiguous in practice as I will discuss below.

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[21] The theory of common knowledge suggests that in order for shared beliefs to exist at all among the players of a game regarding the internal state of the game, it is sufficient and "almost" necessary that there is a *common prior* among the players about the social distribution of types of the players as distinguished, for example, by pay-off function, beliefs, the set of feasible action choices (Aumann and Brandenburger 1995). The presumption of a common prior in a context of bounded rationality may imply that actual beliefs of the players could be differentiated in details by their positions (kinds of players) and actual types (presumably conditioned by their experiences, traits, actual circumstances in each position, etc.), as well as by their information processing capacities, but identical in essential, summary characteristics regardless of their positions and actual types. Such common prior may be thought of as reflecting the fractions of the population having a certain type in a particular position (player) of the societal game formed via generic historical process (see Aoki 2007).

An obvious starting point is that many corporate activities cause external dis-economies of various kinds beyond their own market relationships and reaching to wider communities and their commons. Remedies for them prescribed by economists, lawyers, governments and others include Pigouvian tax-subsidies, Coasian direct bargaining between generators and recipients of externalities, quantity and other regulations, as well as market-regulation-hybrids such as the creation of emission-rights markets. However, it is increasingly recognized nowadays that these measures alone may not be perfect and incomplete by various reasons, e.g., capacity limits of the public authority in information processing, the lack of proper incentives for public administrators, difficulties of setting up immediate end mediated bargaining and reaching formal agreements among various interest groups, increasing assertiveness of environmental movements and so on.[22] But corporate firms and citizens at large can be directly and informally engaged in social-exchanges.

In other words, corporate firms may be increasingly recognized as players in the global commons game embedded in the society at large in a sense somewhat similar to the irrigation parable told above. If corporate firms pollute natural environments and/or generate health hazards through their economic activities, these firms may incite people to react adversely by criticisms, protests, etc., even if those economic activities are not immediately illegal within current legal framework. On the other hand, corporate firms can, if they wish, directly provide resources for social benefits such as environmental protection, poverty reduction, public health, educational and scientific progress, and so on through the so-called corporate social responsibility (CSR) programs. For a while let us assume that these programs do not immediately contribute to their profits nor are legally called for.[23] In response to social contributions which are costly, however, the citizens at large possibly ascribe social recognitions to provider corporations, which would constitute their *corporate social capital or assets* (to repeat, as distinct from corporate reputation capital in own product markets). Corporate social capital may not be immediately cashed in, but it may be enjoyed by various corporate stakeholders in non-pecuniary manner, e.g., the pride of employees working for a socially reputable corporation, satisfactions of environmentally-conscious stockholders

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[22] See Ostrom (2005) for a decent discussion of the limits of centralized control of "social dilemma".

[23] What is recognized as corporate social responsibility by different societies seems to hinge on ways how social- exchanges have been structured historically in each economy. For example, American corporate executives tend to think their ethical accountabilities as the most important corporate values while Japanese and European corporate executives tend to place higher values on environmental responsibility. See Study on Corporate Values by the Aspen Institute and Booze Allen and Hamilton: http://www.boozallen.com/publications/article/659548.

from owning “green” stocks, amenities of citizens living in clean local community and the like. These benefits may compensate the pecuniary costs of CSR programs.

If stockholders try to select their portfolios only from stocks of corporate firms engaged in CSR programs, however, theoretically they cannot perform better in terms of financial performance, because they restrict the universe from which stocks can be picked. But, interestingly enough, empirical evidences seem to suggest a possibility, if not conclusively, that expenditures for CSR and stock price performance may be correlated, contrary to the theoretical prediction (e.g., Dowell, Hart and Young, 2000:King and Lennox 2001).[24] Why? One simple, but plausible reason could be that profitable corporate firms may be more willing to contribute to a costly CSR program. But a more subtle possibility is that there may be complementarities between social capital investment and product-specific reputation capital. Let us consider the following possibility. The development and commercialization of environmentally friendly technology may be costly and its social value may not necessarily be fully appreciated by buyers of its products. For example, potential buyers of eco-cars may value the savings of gasoline costs but may not be willing to bear the full external costs in terms of higher car price. Thus, managerial calculus of market-specific reputational capital alone may not immediately warrant a corporate firm to pursue the costly technological development and commercialization. However, the failure to do so may be damaging to the accumulation of corporate social capital ascribed by the society at large, while investment in environmentally-friendly technology may enhance the accumulation of corporate social capital. This mechanism is somewhat remindful of the attribution of a non-pecuniary, high social standing to the capable individual members of the work-team as told before. The attribution of such social standing may also amplify the value of market-specific reputation, because the former may enhance the beliefs of potential buyers of products regarding their user-cost-efficiency, durability, and the like, as well as its symbolic -values to them (e.g., environmental “conspicuous” consumption). In other words, higher social corporate capital may serve as positive signal (analogous to advertisement) and contribute to prospects of long-term profits net of costs of CRS.[25]

Another possibility is that investment in corporate social capital is a way to insure the corporation against possible change in property rights arrangements in the commons domain, which stock markets incorporate into their valuations. For example, corporate behavior exerting external effects on natural environments may not have been noticed and contested so far by the society, but the possibility of facing social

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[24] For a good survey on this and discussion of related subject see Heal (2005).

[25] The reverse may not necessarily be the case. For example, tobacco companies may have less social capital, but some of them may have high reputations among smokers.

criticism, product boycotts, litigations, and so on against the same behavior may rise in future, according as social consciousness and information dissemination regarding those effects rise. Such social challenges amount to an attempt for a realignment of de-facto property rights in the global commons domain, i.e., shifts of environmental rights from the producers to the community at large. The accumulation of social capital may guard corporate firms against possible damages that may be brought about by such institutional change, while corporate firms with thin social capital may be more vulnerable. In other words, corporate social capital facilitates the adaptability of corporate firms to such institutional change. Relative distribution of social capital accumulation across corporate firms then may be reflected in their valuations by stock markets.

Summary

This paper has presented a new way to conceptualize and analyze relevance of social constructs, such as social norms, social capital, social status, to economic analysis. Traditionally they were treated as entirely exogenous factors to economic analysis, of which origins, sustainability and so on are to be dealt with outside economic analysis (the dichotomous approach). Recently, game theoretic analysis sheds light on the nature of social norms as rational constructs of reputation mechanism in repeated games. However, this endogenous approach cannot explain possible roles of social norms to control externalities where the reputation mechanism fails to hold because of technological non-excludability of deviant players from game. Further it does not provide a workable framework for understanding the dynamic role of social norms which overlap with sequentially arising economic games (such as the transition from the pre-capitalist community to the market economy; the shift of environmental property rights from the corporate sector to the civil society at large). This paper proposed a third way between the dichotomous and endogenous approaches, which may be taken as a game-theoretic unification of economic and sociological approaches. It started with presenting a rough idea of social-exchange game in which the community of people interacts with each other by using social symbols for the purpose of affecting others' emotional pay-offs with unspecified obligations of reciprocity. Then this game is linked to economic-transaction games of various kinds. Norms are then understood as the standards of economic behaviors supported by self-sustaining empirical and normative beliefs linking the two. An example was drawn from a simple parable of irrigation game in the closed, homogenous community, as it was able to provide generic logics most clearly and succinctly. However the ultimate goal of the paper was to apply the logic to the contemporary issue of possible tragedy of global commons. It discussed why corporations are engaged in costly Corporate Social Responsibility program to cope with it beyond legal obligations and why stock market appears to value it. The paper suggested that the accumulation of corporate social capital may be becoming important assets for corporations to survive economic competition at the time of gradual transition in environmental property rights arrangements.

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