

# A theory of trust based systems of intermediation

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Recent studies have analysed the economic benefits of belonging to high-trust networks and the biological foundations of individual trust, but much scepticism remains regarding the precise role of trust in economic transactions, as well as gaps between micro and macro concepts of trust. This paper links individual and institutional trust by modelling the costs associated with accessing market, law and trust-based intermediation systems, and identifies the conditions under which one of the three systems may be more advantageous for rational actors, and thus more likely to emerge. The discussion concentrates on examples drawn from development policy to illustrate how the three systems operate together, and how the failing of the trust system affects the legal and market systems.

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## 1. Introduction

Trust is studied for its importance in the co-ordination of information flows necessary to exchange in a wide range of contexts, from default on a loan, to the breaking of contractual promises between firms or electoral promises by government (Arnott and Stiglitz, 1991; Williamson, 1996; Khalil, 2003). Economic theory, however, is ambivalent about this concept and has gone to great lengths to explain either that trust does not matter or that it is indeed crucial, depending on which side in the debate the author takes (Fehr *et al.*, 2005; Samuelson, 2005). This paper aims to contribute to the discussion by adopting a perspective that regards economic institutions as coordinating mechanisms, and to shed some light on the role of trust intermediation in coordination problems (North, 1990; Aoki 2001; Bardhan, 2005; Casson and Della Giusta, 2004, 2005). The aim of the paper is twofold: on the one hand, to show the relationship between markets, law and trust-based intermediation systems, which are often found operating simultaneously in a society; and on the other, to contribute to the construction of a concept of macro-level or institutional trust, which is based on individual trust (Granovetter, 1985; Zaheer *et al.*, 1998; Soroka *et al.*, 2003; Beugelsdijk, 2005). In particular, by concentrating on the costs of establishing

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trustworthy connections, the paper presents a model that identifies the conditions under which market, law and trust-based intermediation systems may be the preferred forms of intermediation by rational actors.

Orthodox economic theory assumes that people are selfish and maximise their material gains, that given the opportunity they will cheat, and therefore sanctions are incorporated into contracts. Trust is seen as a useful commodity to acquire in order to be able to do business with others. However, the cost of trustworthy connections and the ways in which these are established are not really discussed (Casson and Della Giusta, 2005). This is a key aspect of relationships, though, as agents will typically be differentiated on the basis of their ability to access opportunities for transactions on the basis of both their own characteristics (education, time and financial resources spent in their social circles, ability to travel, etc.) and those of their environment (degree of market development and of property rights enforcement in the system, as well as the extent to which social networks are able to ensure access to resources). Looking explicitly at the costs associated with transaction opportunities is therefore crucial in that it allows a well-informed rational actor to decide between different modes of intermediation; equally, looked at from a macro perspective, it allows us to make inferences about the nature of agents and environments on the basis of observing the prevailing intermediation mode, which generally can be provided by the market, the legal system (which includes the firm, viewed as a nexus of contracts) and by social networks.

This differs from the traditional focus of institutional theory, which in spite of giving a central role to coordination problems (Coase, 1988), does not really focus on the intermediation stage, but rather on the respective roles of market, law and firms as mechanisms for ordering transactions. Indeed, the debate in subsequent literature largely concentrates on differences among this specific set of three institutions, and on intricate debates on the relative importance of transaction costs and initial entitlements (Calabresi, 1968). However, comparative institutional analysis shows that social structures produce a variety of arrangements for coordinating activities: markets, governments, firms, banks, clubs and social networks<sup>1</sup> that people can leverage to access resources.<sup>2</sup> This literature suggests that there are costs and benefits associated with belonging to networks, to the extent that people can be 'locked' into networks, as is shown in the literature on the so-called 'dark side' of trust and social capital, illustrating how trust can also form the basis for close networks that are counterproductive to the individuals concerned and/or to society at large (e.g., poverty traps or Mafia-style organisations) (Della Giusta, 2003). The costs arising from trust-based networks and their relationship to those arising from other forms of intermediation, however, are not generally focused on, as the institutional view of trust is based on the idea that trust is the quality of legal institutions, and tends to neglect the role of social intermediation and culture. The relationship between social intermediation, market and legal system, however, is the key to understanding the emergence of more or less trusting environments, as agents will interact more or less frequently within each system depending on the success they have experienced with each, both in terms of achieving their purposes (that is, experiencing trustworthy behaviour), and in terms of feeling they can reliably do so on future occasions (that is, trusting the system). This is particularly relevant in discussions of economic development, where mounting evidence

<sup>1</sup> There is an emerging literature that tries to evaluate the economic benefits of belonging to 'networks of trust' (e.g., Haddad and Maluccio, 2003).

<sup>2</sup> For example, Ellickson (1991) downplays the importance of the law and highlights the role of social norms in resolving distributional issues and settling disputes in general.

suggests that the development of a legal system cannot be achieved without the simultaneous strengthening of social institutions (e.g., the evidence from post-Communism countries in Welter *et al.*, 2005),<sup>1</sup> and macro studies have tried to link differences in trusting attitudes across countries<sup>2</sup> to economic growth and development (Knack and Keefer, 1997; Zak and Knack, 2001).

The approach to trust adopted in this paper incorporates emotions and sanctions deriving from moral commitment as well as the law, and assumes that people attribute intrinsic value to a reputation for trustworthiness. This assumption has its origin in the economic sociology literature on embeddedness and social capital (Granovetter, 1985; Bordieu, 1986; Coleman, 1988; Putnam, 1993; Mansky, 2000), which points to two distinct ways in which reputations matter to economic agents: first, because as social beings they derive utility from a positive evaluation by others in the social groups they belong to (Casson, 1991) and, second, because they are aware of the costs that social sanctions may impose on their material progress (Akerlof, 1980; Arnott and Stiglitz, 1991). It defines trust brokers as reputable intermediaries who value trustworthy relationships and gain emotional satisfaction from mediating between people, and describes their role in determining market access and economic opportunities. The emotional rewards from trust, from the sense of participation in a social project, and access to a subsidised rate of intermediation means that, effectively, social networks around trust brokers constitute a set of implicit contracts relating to the realisation of social solidarity, in the same way in which a firm is seen in institutional theory as a set of legal contracts for the realisation of profit. Understanding that the functioning of the trust system of intermediation also underpins the quality of legal institutions, which are seen as a formalisation of the other intermediation systems. A functioning legal system embodies the values of trustworthiness and fairness prevalent in the social system that are also reflected in the presence of trust-based intermediation. Different cultures and societies can also be described according to the relative dominance of the three intermediation systems in different contexts, depending on the actors involved, the objects of the transaction and the environment in which it happens (who does *X* go to for a job, for a certain type of service, for a loan, for a certain type of good—car, house, etc.—where *X* can be an individual or an organisation?).

## **2. Defining the terms: trust**

In standard neoclassical theory people are assumed to be selfish and maximise their material gains. They will therefore have an incentive to cheat, so sanctions are incorporated into contracts to prevent them from doing so. In this context, trust is useful only in so far as it reduces the costs associated with having to devise perfect contracts and enforceable sanctions, so it is a purely instrumental non-material resource in which people will explicitly invest with the purpose of building a reputation for honesty. The latter, in turn, makes possible cooperative behaviour and the emergence of stable structures for transacting. More specifically, the neoclassical notion of trust refers to exchanges among individuals involving deferred compliance with (some of) the exchange agreements (as

<sup>1</sup> Results of a study of entrepreneurial behaviour in Eastern and Western Europe indicate that personal trust plays the most important role during venture creation and a less important one during business growth and in stable regional environments, where institutional trust gains importance, although without dominating entrepreneurial behaviour. Typically entrepreneurial behaviour is based on a mixture of personal and institutional trust (Welter *et al.*, 2005).

<sup>2</sup> Although it has been argued that the variable used to measure trusting attitudes in the World Values Survey is actually a proxy for the well-functioning of institutions (Beugelsdijk, 2005).

opposed to transactions on the spot), accompanied with insufficient information about other agents' choices.

Trust is a particular level of subjective probability with which an agent assesses that another agent or group of agents will perform a particular action, both before he can monitor such action (or independently of his capacity ever to be able to monitor it) and in a context in which it affects his own action. (Gambetta, 1988, p. 217)

The hypotheses on which such definition is based, and which define the behavioural hypotheses, and therefore the boundaries within which transactions are treated in conventional neoclassical and game theory models, can be summarised from a paper by Partha Dasgupta (in Gambetta, 1988) illuminatingly entitled 'Trust as a Commodity'.

First, in the absence of suitable punishment for breaking agreements, it is believed that the individuals involved in them will not have sufficient incentives to fulfil them (so that scarcity of trust derives, in this context, from the fact that people are assumed to be not naturally trustworthy). Second, the threat of such punishment must be credible. Given that at this stage a third party, in the form of another individual or agency, is required as enforcement agency, trust needs to be placed in such an enforcement agency. The third hypothesis states that trust among persons and agencies are interconnected, because if trust in the agency vacillates, so does trust in the other agent involved in the agreement. Fourth, trust is based on an expectation about choices made by another agent, and not about promises, which means that, in order to form such an expectation correctly, the other party's perspective has to be taken. The definition of trust to which Dasgupta arrives on the basis of these premises is not dissimilar to the one presented above by Gambetta: trust consists of correct expectations about actions of others that have an influence on one's own choices. Trust is therefore a scarce non-material resource, and its value is, in principle, measurable and described as being akin to the value of knowledge or information.

Lack of trust among individuals involved in a transaction helps to explain one of the main results of game theory: that individuals may fail to cooperate even if cooperative behaviour would benefit them, loosely referred to as the Prisoner's Dilemma. The rational decision of investing in trust (by creating a reputation of being trustworthy) is indicated as a building block for a healthy economic system, in that it allows transactions to occur.

Trust will develop, according to results derived in game theory, if individuals have repeated encounters and have memory of the outcomes of the previous ones, if honest behaviour involves a cost and agents are willing to incur it to build a reputation (Gambetta, 1988). In particular, Kreps *et al.* (1982) demonstrate that, in an infinitely repeated Prisoner's Dilemma game, uncertainty about the nature of the payoff to a player can produce cooperative equilibria. The crucial conditions determining the need for trust in neoclassical economic theory are therefore connected to the impossibility of monitoring other agents' behaviour, which is affected not just by non-trustworthiness, but also by the existence of a non-congruence between individual and moral values (otherwise declarations of intent would automatically translate into the corresponding actions, eliminating the problem). The approach is geared towards devising contracts with suitable incentives to make people behave in a trustworthy manner. The rewards and penalties built into the contracts create a system of sanctions, which make fundamentally selfish people behave in a socially responsible way.

Some forms of institutional economic theory, such as transaction cost theory, have been criticised for being too neoclassical because they place undue emphasis on coordination by markets and hierarchies and ignore informal methods of coordination based on networks of

trust. This criticism has some force, particularly when applied to Williamson's early work, where an emphasis on the ubiquity of opportunism leaves little room for trust to play a significant role in coordination. Although in his work the existence and importance of personal trust between individuals (based on absence of monitoring and a favourable and forgiving attitude) is acknowledged, the attitude that is believed to be associated with the majority of transactions (involving individuals and institutions) is, in essence, a pure calculation: individuals involved in an exchange are well aware of the set of possible outcomes and the corresponding probabilities, and therefore take cost-effective actions to try to avoid hazards and enhance benefits (Williamson, 1996). Fukuyama's influential discussion on trust (Fukuyama, 1995) also ignores the crucial economic distinction between trust mediated by formal legal institutions and trust mediated by moral and social mechanisms and this leads him to characterise the competitive and individualistic culture of the USA as high-trust and to play down the levels of trust in less competitive and more organic societies.

The literature in experimental economics and neuroeconomics, however, is producing interesting results, which deviate from what is expected by the theory on microfoundations, by examining brain processes taking place when performing actions and assessing perceptions and the formation of beliefs (Fehr *et al.*, 2005). This literature documents the deviation from self-interested behaviour, the emergence of social norms and the general economics of reciprocity (Fehr and Gaechter, 2000; McCabe *et al.*, 2003; Smith, 2003; Sobel, 2005). Using evidence from both psychological studies and social policy, as well as experiments, these studies show how notions of reciprocity inform actors' behaviour and how individuals are willing both to punish people who violate norms, and incur costs in doing so (Fehr and Fischbacher, 2004). There is also evidence that links responses of the brains of actors playing a trust game indicating that trust develops as a response to reciprocity (King-Casas *et al.*, 2005), which confirms the interpretations of the workings of the brain given in experimental economics (McCabe *et al.*, 2003; Zak *et al.*, 2005). The identification of the 'trust hormone' is expected to give force to the argument, through biology, that trust matters and provide good indications of ways in which it can be affected through institutional design.

These ideas are consistent with findings from the recent literature on happiness and well-being which suggests that trust is a major factor in explaining differences in happiness (Layard, 2005), and indicates that the emotional dimension to trust should be explicitly accounted for in models of exchange. Introducing the emotional dimension shows that morals as well as law can act as a basis for trust (Goodenough, 2001). The approach taken here considers the moral dimension to be an essential component of any comprehensive economic theory of trust. Recognition of emotions is perfectly compatible with the rational action approach, provided that emotions are considered as forms of utility or pay-off rather than merely as a factor that distorts decision-making. From a rational action perspective, pleasant emotions are goods whilst unpleasant emotions are bads: they enter into an individual's utility function in just the same way as any other good or bad. The literature on trust acknowledges that people react emotionally to the situations in which they are placed:

Trust encompasses rational evaluation, but this is subject to cognitive limitations, and social-psychological phenomena play an important role. In particular, the question is how people attribute motives and competencies to people on the basis of observed behaviour, and how this affects their trust and their conduct. (Noteboom and Six, 2003, p. 1).

Uslaner (2002) distinguishes strategic trust, based on individual experience, and therefore akin to expectations, from moralistic trust, based on one's view of the world and system of

beliefs. Moral commitments frame the emotions that people generate as a result of the actions that they take. A person acting morally feels good about taking a socially responsible decision and feels bad about taking an anti-social decision. Anticipating how they will feel about the way they act, people acting morally win self-approval and avoid guilt. This makes them trustworthy, because they can be relied upon to take account of the impact of their actions on others. As a result, a reputation for trust can be built on the basis of making a visible moral commitment to a system of shared values motivating behaviour (Lahno, 2001). People thus attribute intrinsic value to a reputation for trustworthiness. Morals are not the only basis for reputation. In certain cases, enlightened self-interest provides an adequate incentive to behave in a responsible way, and several orthodox authors still base the entire case for trust on enlightened self-interest (Samuelson, 2005).

Trust is also specific: Soroka *et al.* (2003), in discussing the problem of measuring trust, suggest that the reason for consistently different responses to trust questions in surveys is that different questions ask respondents to think about trust in different ways. *A* trusts *B* to do *X* in situation *Y* (Casson and Della Giusta, 2004; Della Giusta, 2003). Trust is therefore a belief that other people will honour obligations in varying contexts: from an open commitment to promote social welfare through to mere conformity with conventions (Soroka *et al.*, 2003). The depth of trust is connected to types of obligations.<sup>1</sup> *B* could therefore be trusted in one role but not in another, and if *B* is trusted by many *A*'s, s/he has a reputation. The wider reputations spread, and the more accurate they are in reflecting trustworthiness, the more trust will diffuse.

The establishment of trustworthy relationships and reputations is usually studied in the context of direct contacts between individuals, which may or may not be observed by third parties (Bachmann, 2001; Henrich *et al.*, 2004); however, plenty of evidence (Granovetter, 1983) suggests that a widespread option used for establishing trustworthy relationships is through intermediaries. If reputations can be gained through trust brokers (as, for example, the process of providing references indicates) a key question is then how intermediation in interpersonal trust takes place: who makes two individuals who previously did not trust each other do so, and what are their relevant characteristics?

Understanding trust intermediation allows one also to address the key issue of the scaling up of trust, that is the relationship between the establishment by agents of networks of interpersonal trust and their trust in institutions. This is key to a concept of macro-level or institutional trust, which is based on individual trust (Granovetter, 1985; Zaheer *et al.*, 1998; Soroka *et al.*, 2003; Beugelsdijk, 2005) and to understanding the role of policy in trust-building processes (Della Giusta, 1999; Casson and Della Giusta, 2004). This relationship also lies at the heart of the debate on the effects of globalisation: Giddens (1990) argues that modernity/globalisation has the effect of disintegrating social relationships across space and time, and that this means trust is transferred from people to 'disembedding mechanisms', chiefly the creation of symbolic tokens (money) and expert systems (of technical performance or professional knowledge), which work only if people trust them (Hoehmann and Malieva, 2005). Institutional trust is associated with these systems, and it is therefore relevant to understanding how they evolve from systems of interpersonal trust.

<sup>1</sup> Measuring the depth of trust requires characterising obligations according to: the nature of the obligation; the size of the obligation, as measured by the value of the resources to which the obligation relates; the certainty of the obligation being honoured, as measured by the subjective probability that that there will be no default; and the reliability of the obligation, as measured by the actual frequency with which default occurs (Casson and Della Giusta, 2005).

The remainder of the paper presents a model that incorporates the assumptions made on trust in the description of three distinct types of intermediation, and then explores the relationships between the three systems by focussing on the cost-based conditions under which agents will be using them,<sup>1</sup> deriving implications for both policy design and future research. The model only focuses on comparative statics, as this is sufficient to illustrate the basic points. A dynamic model of trust accumulation and its effect on agents' and groups' welfare is provided in Della Giusta (2006).

### 3. A model of trust-based intermediation

The model consists of an exercise in comparing the transaction costs of different institutional arrangements and presenting some comparative static results that illustrate the conditions under which each of the coexisting arrangements may be preferred over the others. It describes a single indivisible transaction, and compares three different types of intermediation to accomplish it, with the aim of establishing the conditions under which a contractual form will be chosen, the associated fees, and rates of default. The problem consists of an individual ( $n$ ) who needs access to providers of goods ( $p_i$ ) who may or may not be reliable. The individual does not know to what extent they are reliable, and therefore there is a risk associated with dealing with each of them. A successful solution is one in which someone selects one of the providers, who then delivers the goods.

The model also includes access costs, which are typically part of any intermediation system: for example, the market may be located at some distance from  $n$ , so that an additional financial cost will have to be incurred in order to access it. Let us start with the conventional intermediation systems discussed in the literature:

- *Market intermediation*, based on intermediaries who select a provider and charge a fee ( $r$ ) for their service. The latter consist of either choosing for  $n$  a reliable provider (acting like a retailer) or managing risk on behalf of  $n$ , once  $n$  has chosen a provider (acting like insurer). Note that these intermediaries can be part of the formal or informal sector, therefore this mode of intermediation can, in principle, also describe forms of patronage.
- *Legal intermediation*, based on contracts designed by lawyers, who do not select a provider but help ensure delivery, enforced via the judicial system. The individual hires a lawyer, paying legal fees ( $l$ ).

We assume that the object of the transaction is a homogenous good  $g$  of price 1, which is going to be delivered with probability  $\rho$ , unknown to  $n$ , and start by discussing the choice between these two intermediation systems.

#### 3.1 Market intermediation

The retailer provides certainty of delivery to  $n$ , charging a unit fee  $r$  which needs to be greater than the probability of non-delivery ( $r > 1-\rho$ ). The cost of accessing the market is  $c_m$ . Utility for  $n$  will be given by:

$$U(c)_m = g - rg - c_m \tag{1}$$

and marginal utility will be:

<sup>1</sup> Although costs need to be quantified and therefore restrict the range of aspects to a transaction, it is nevertheless true that just incorporating this aspect allows one to make comparisons between systems that have not yet been focussed on in the literature.

$$\frac{\partial U(c)_m}{\partial g} = 1 - r \quad (2)$$

### 3.2 Legal intermediation

In this system, lawyers provide a contract for a unit fee  $l$ , and the contract reduces risk of non-delivery ( $\rho_l > \rho$ ). The cost of accessing the legal system is  $c_l$ . Utility for  $n$  is:

$$U(c)_l = \rho_l g - lg - c_l \quad (3)$$

and marginal utility will be:

$$\frac{\partial U(c)_l}{\partial g} = \rho_l - l \quad (4)$$

### 3.3 Choosing between the market and legal system

If the two systems coexist, the choice at the margin between them will be determined by equating marginal utility under the two arrangements:

$$\frac{\partial U(c)_m}{\partial g} = \frac{\partial U(c)_l}{\partial g} \quad (5)$$

This shows that the market system will be chosen if the associated fee is smaller than the sum of legal fee and cost of default under the legal system:

$$r > l + (l - \rho_l) \quad (6)$$

Conversely, the legal system will be chosen if the legal fee is smaller than the difference between market fee and cost of compliance, which in the present system is equivalent to saying that the legal fee is smaller than the insurance component of the market intermediation fee. Solving equation (5) for compliance rates shows that marginal utility is greater under the market system for  $\rho < \rho^{**}$ , and greater under the legal system for  $\rho > \rho^{**}$ , where  $\rho^{**} = l + 1 - r$

Looking now at total utility under the two arrangements, we see that:

$$U_n = \begin{cases} g(1-r) - c_m & \text{for } \rho < l + 1 - r \\ g(\rho - l) - c_l & \text{for } \rho > l + 1 - r \end{cases} \quad (7)$$

if access costs are the same, utility will be greater under the legal system if the difference between the market and legal fee (insurance cost) is lower than the default rate:

$$r - l > 1 - \rho \quad (7.1)$$

If access costs differ, utility under the legal system will be higher if the difference between access costs is greater than the difference between cost of cost of default and of insurance. Obviously, the latter costs fall if default falls:

$$c_m - c_l > g(l - \rho) - g(r - l) \quad (7.2)$$

Utility under the two systems will be the same if the difference between access costs is equal to the difference between cost of default and cost of insurance. This requires that if  $c_l > c_m$ , the cost of insurance must be greater than that of default.



3.4 Introducing trust-based intermediation

Let us now see what effect the introduction of trust intermediation has on the model, and whether it changes the results. The system is based on trust-brokers (*b*), who have trusting relations with some providers, which imply that they can both choose a reliable provider for *n*, and ensure against risk through the social sanctions associated with non-delivery. Trust brokers gain status from connecting people and an emotional reward from building social solidarity around a project: however, they are building a structure that does not necessarily bring immediate reward to them (although they may be able to leverage it for their own benefit as well).

In order to access this intermediation system, *n* needs to belong to the trust brokers' social network and to do so incurs a cost that can consist of a variety of pecuniary and non-pecuniary elements (e.g., time cost, travel cost, etc.), *e*. Technically, *n* needs to possess a minimum level of bridging and linking social capital, that is, the kind that allows one to transcend one's immediate social circles and enter other social networks (World Bank, 2000) To keep the comparisons possible, we associate a cost to this social capital and call it (*c<sub>t</sub>*).

Utility under the trust system is:

$$U(c)_t = \rho_t g - eg - c_t \tag{8}$$

and marginal utility is

$$\frac{\partial U(c)_t}{\partial g} = \rho_t - e \tag{9}$$

Let us now compare marginal utilities in the three systems for *n*, when *n* can access all three systems.

$$\frac{\partial U(c)_m}{\partial g} = \frac{\partial U(c)_l}{\partial g} = \frac{\partial U(c)_t}{\partial g} \tag{10}$$

This shows that trust intermediation is always preferred to the market system, and it is preferred to the legal system if the difference between fees is greater than that between compliance rates:

$$l - e > \rho_l - \rho_t \tag{11}$$

This result is non-trivial because it is usually assumed that a trust-based system is either always capable of delivering higher compliance rates (which is not assumed here) or able to do so in a costless way (which is again not assumed in this model). Solving equation (10) for compliance rates (as depicted in Figure 1) shows that marginal utility is greater with market intermediation for compliance values ( $0 < \rho < \rho^*$ ), where  $\rho^* = e + l - r$ . Marginal utility is higher with trust intermediation for ( $\rho^* < \rho < \rho^{***}$ ); and, finally, legal intermediation is the best option for expected compliance values above  $\rho^{***} = l - e$ .

Looking now at total utility under the three arrangements, we see that:

$$U_n = \begin{cases} g(1-r) - c_m & \text{for } \rho < \rho^* \\ g(\rho - e) - c_t & \text{for } \rho^* < \rho < \rho^{***} \\ g(\rho - l) - c_l & \text{for } \rho > \rho^{***} \end{cases} \tag{12}$$

In the absence of access costs, utility under the trust system is always higher than under the market system and higher than the legal system if  $e < l$ . If access costs differ, utility under the trust system will be higher than the market system if:

$$c_m - c_t > g(1 - \rho - g(r - e)) \tag{13}$$

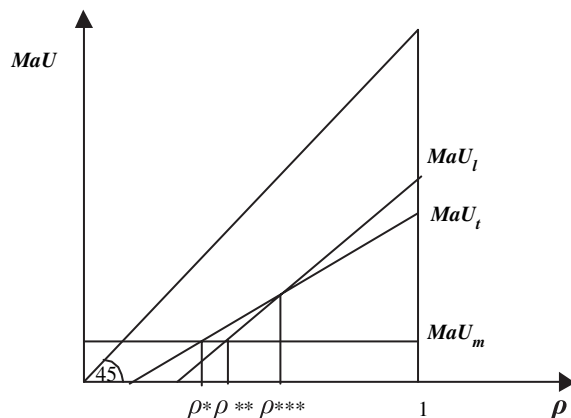


Fig. 1.

utility under the trust system will be higher if the difference between access costs is greater than the difference between the cost of default and the fees differential. Utility in the trust system will be greater than in the legal system if:

$$c_l - c_t > g(e - l) \quad (13.1)$$

that is, if the difference between access costs is greater than the difference between fees. If the above conditions hold,  $n$  will have higher utility than was possible with the market and legal systems alone. These conditions must be verified in cases such as those observed in the famous sociological work by Granovetter, 'Getting a job' (1995), in which he found that the majority of respondents in his sample had found their job through personal connections, rather than through agencies or applying directly. This also suggests that if the trust system is not available to  $n$ , welfare losses will be incurred. Let us illustrate the reason for this.

### 3.5 Access costs and individual endowments

So far, we have assumed that access costs are homogeneous across individuals, but although this may be a fair approximation of what happens in the market system (for example, a transport cost to reach the market), this may be an incorrect assumption when illustrating the working of the legal and trust systems. The legal system, in fact, may entail not only a financial cost but also a human capital cost, in that it is necessary to possess sufficient information about the legal system to feel confident in using it. However, we have said that the social system requires  $n$  to possess a minimum level of social capital. Neither human nor social capital can be readily acquired like a bus ticket, and rather form part of more durable assets, which contribute to individual endowments. Assuming the general case discussed so far to be Case 1, let us now investigate the options available to  $n$  if their income or human or social capital fall below the minimum required to access one of the intermediation systems.<sup>1</sup>

<sup>1</sup> Clearly, if they lack two of the three completely they will only have one option available, and therefore no choice.

*Case 2: n has sufficient income and human capital but insufficient social capital.* Saying that  $n$  has no bridging and linking social capital is equivalent to saying that they cannot afford the access cost to the trust system, and they therefore will have only two alternative intermediation options: the market system and the legal system. This brings us back to our first case (see Figure 2).

*Case 3: n has sufficient income and social capital but insufficient human capital.* In this case,  $n$  will not be able to access the legal system, and will therefore choose between the market and the trust system. At the margin, the trust system will yield higher marginal utility for  $\rho > \rho^*$  (Figure 3).

Total utility when  $n$  has insufficient human capital will be:

$$U_n = \begin{cases} g(1-r) - c_m & \text{for } \rho < e + 1 - r \\ g(\rho - e) - c_t & \text{for } \rho > e + 1 - r \end{cases} \quad (14)$$

and total utility will be higher in the trust system if condition (13) obtains, and lower otherwise.

*Case 4: n has sufficient human and social capital but insufficient income.* In this case, the trust and legal systems are the only available options and the choice of one over the other will depend on the cost of trust intermediation relative to legal intermediation. Given that  $e < l$ , the legal system will be preferable to the trust system for  $\rho > \rho^{***}$ . Note that in this case no transactions will take place for  $\rho < e$ . This illustrates how poorer people (who cannot insure themselves completely against the risk of malfeasance) are the most disadvantaged when malfeasance is widespread (Figure 4).

Utility when  $n$  has insufficient income will be as follows:

$$U_n = \begin{cases} 0 & \text{for } \rho < e \\ g(\rho - e) - c_t & \text{for } e < \rho < \rho^{***} \\ g(\rho - l) - c_l & \text{for } \rho > \rho^{***} \end{cases} \quad (15)$$

and when condition (13.1) obtains, utility under the trust system will be higher than in the legal system.

To summarise, comparing utilities across situations indicates that the market intermediation system is the most efficient in cases of low compliance; but it excludes all those who cannot pay the access cost. The legal system is the most efficient if high compliance levels are expected, but it excludes people with low human capital.<sup>1</sup> The trust system of intermediation is the most efficient for intermediate levels of compliance, but excludes those who have no linking and bridging social capital. The best situation is one in which all three systems are present, as this guarantees access to the largest number of people, and also suggests that the three systems complement each other. Generally, this supports Uslander's finding that trusting societies are more likely to redistribute resources from rich to poor and to have more effective governments (Uslander, 2002).

### 3.6 Breadth and depth of trust

If we enlarge the model to assume not one single transaction but many, it becomes apparent that other characteristics of trust brokers become relevant. Again, referring to Granovetter's seminal work on the 'strength of weak ties', which illustrated how acquaintances are more important than friends in finding a job, since they belong to

<sup>1</sup> As one of the referees aptly pointed out, the model does not contemplate contractual failure in the legal system, but should that occur obviously it would further strengthen the superiority of the trust-based system.

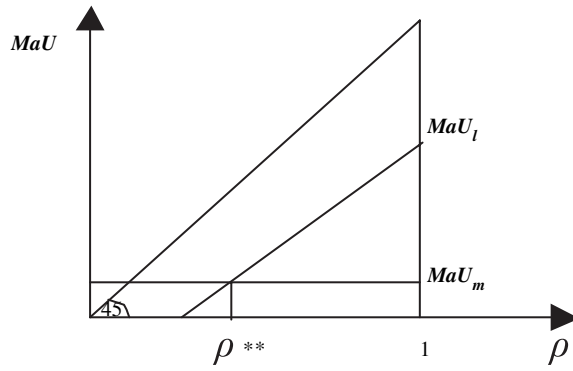


Fig. 2.

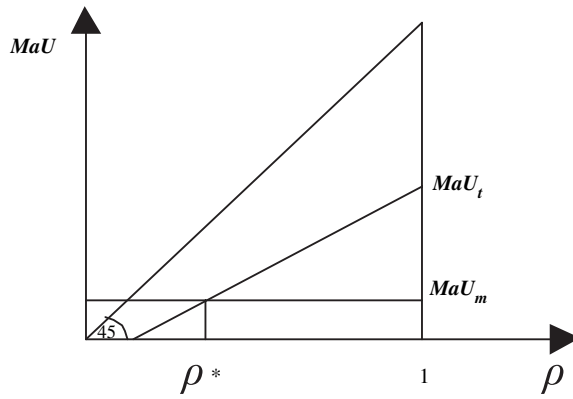


Fig. 3.

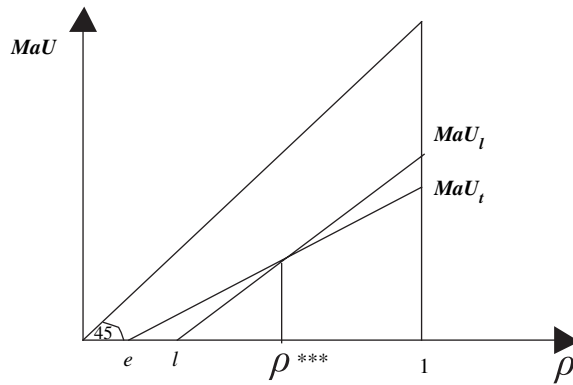


Fig. 4.

different social circles (reflected in the notion of linking and bridging social capital), we can safely assume that a trust broker's ability to secure many connections to providers will be relevant (a large pool of  $p_i$ ), which we call breadth of trust. Another important feature of trust brokers, which is relevant in transactions involving deferred compliance with obligations, as illustrated in our model, relates to the ability to secure high compliance (that is, ensuring the highest possible  $\rho_i$ ), which we can call depth of trust.

Having defined these two properties, it is possible to relate them to the stability and resilience of the trust-based system of intermediation. Stability will relate to the number of alternative providers  $n$  has access to through trust brokers, which in turn depends on the number of brokers and on how broadly connected they are. In network language, this would mean counting the number of links from  $n$  to providers that go through brokers (density). Resilience will relate to the depth of those connections, that is, on the average degree of compliance with obligations in the trust system available to  $n$ . A trust intermediation system will then fail if trust brokers fail, that is, if breadth and depth fall below a certain acceptable minimum.

If the trust system fails because of lack of depth, people stop relying on trust brokers and prefer formal intermediaries, as happens in high labour mobility areas as discussed in the literature on migration and social capital (Schiff, 2002). The model predicts that, in such a system, poorer people will be excluded from access to providers if they cannot afford to purchase insurance or to pay taxes and legal fees, whereas better off people will be able to access everything they want irrespective of whom they know. If the trust system is superior in terms of ensuring delivery, though, in its absence considerable resources will be used to purchase insurance and pay legal fees, and these will be diverted from more productive purposes.

If the trust system as a whole fails because of lack of breadth, then people will tend to find themselves locked in isolated enclaves (the case of some communities excluded from access to certain types of providers), which can become poverty traps or stagnant elites depending on their income levels. Localised failure due to lack of breadth coincides with lock-in, which from the point of view of an individual occurs when they are very far in social terms from accessing trust brokers who span other social networks than their own, as is often the case for immigrant communities (Della Giusta and Kambhampati, 2005).

More research is needed to discuss what the minimum number of trust brokers in the system needs to be or the desirable extent of 'wastage': redundancy of trust brokers might mean that competition between trust channels ensued, and as intermediation also involves reconciling conflicting interests, a degree of competition can ensure protection of the interest of the weaker parties and make sure that trust intermediation does not degenerate into exploitative and paternalistic relations (Barber, 1983).

The model is highly stylised but it can be used for a variety of purposes: here it has been shown how different intermediation fees, access costs and individual endowments can be used to simulate different individual choices, but the parameter indicating the level of compliance could also be varied to incorporate different contexts, and therefore be used to discuss the prevalent type of intermediation found in specific countries or sectors. Furthermore, the diagram can also be interpreted in a dynamic sense as an evolution of intermediation systems in low compliance environments (such as societies disrupted by conflict) and the conditions necessary to develop each system. Also, it would be possible to vary the characteristics of the good to be exchanged, for example, in order to distinguish between goods that require verification or more standardised ones (reflecting the relative amount of tacit versus codified knowledge that the good incorporates).

#### 4. Policy implications and conclusions

The first obvious policy implication of the model is the importance of infrastructure, human and social capital in enabling transactions to occur, given the presence of access costs to all three intermediation systems.

The second important implication concerns the relationship between the trust and the legal system of intermediation. The latter is usually seen in institutional theory as evolving through the gradual and piecemeal incorporation of culture-specific interpretations of formal rules (Deakin and Wilkinson, 1998; North, 2000). In the context of the three systems presented above, the legal system incorporates elements of both market and trust systems, therefore understanding the functioning of the trust system of intermediation can help explain the evolution of the legal system.

From the cases illustrated above, if the trust system of intermediation fails because it cannot ensure depth, it can be expected that, over time, the legal system will become more market-based and those who can pay the highest legal fee are more likely to secure contract enforcement;<sup>1</sup> if it fails because it cannot ensure breadth, over time the legal system also becomes fragmented and weakened, as illustrated by cases of ethnic conflict within states. The discussion of the effect of transition on trust in former communist countries (Rose, 2000; Raiser, 2004) indicates that the prevalent system for contract enforcement in the wake of the collapse of central planning was, at least to begin with, an informal one based on intimidation.<sup>2</sup> According to the model presented here, this suggests both that the cost of developing a legal system was too high and that trust-brokers were scarce. This is what one might expect, since one of the characteristics associated with totalitarianism is the presence of a widespread climate of suspicion and closed social groups, which is clearly counter to diffused social relations in which trust-brokers thrive.

Focusing on the development of a market and a legal system, therefore, means ignoring the link between interpersonal and institutional trust: trust is undersupplied in a society with underdeveloped trust intermediation, and this will impinge on both the quality of legal institutions (reflected in the degree of institutional trust) and the level of economic activity. Trust intermediation offers a subsidy and therefore in its absence poorer individuals will be excluded, and the overall productive potential will not be exploited. Moreover, resources will be used to purchase insurance and pay legal fees, and these will be diverted from more productive purposes.

It is useful at this point to contrast two interpretations of reform failure, which differ in the consideration they give to the social economy and trust intermediation. Dixit (2001) interprets the reform problems experienced by developing countries as problems of moral hazard in multitask and multiprincipal agencies, the solution to which depends on appropriate incentives and organisational reform. His transaction-cost politics framework suggests that the solution for reform failure is to change the incentive structures in public service careers, for example, by importing administrative expertise from other countries. In contrast, Radaev (2005) presents evidence from a research project on transaction costs in Russian business, and particularly the cost of legalisation, which suggests that business people have become more cautious, they use methods of private contract enforcement (pre-payment), fewer transactions are taking place, particularly with outsiders, and business networks are emerging between partners who have established

<sup>1</sup> The perception of fairness of a legal system is often discussed in connection with the relative dominance of lawyers and the fees they command.

<sup>2</sup> Jokingly labelled by a scholar in the field as 'a Mercedes with four guys with guns'.

a trusted relationship and via trusted intermediaries. His findings support the view that trust begins to emerge at the micro level with reciprocal relations in closed business networks, which change over time from affect-based trust to reputation-based trust. It is thus investments in reputation which contribute to the development of trust in non-state institutions to begin with, and can be used to develop trust in state authorities if the government invest in predictable policy.

This paper supports the latter view, and suggests that strengthening trust intermediation might be a cheaper and more effective method than insisting on transplanting legal systems in developing countries. A policy of strengthening trust-based intermediation would require identifying trust brokers and working with them on a trustworthy and honest basis. Sadly, current debates on the reconstruction in Iraq offer a pertinent counterexample: here much official emphasis is placed on the restoration of the rule of law, whilst trust relations are simultaneously being destroyed by the military occupation and the negative effects from the fraudulent reconstruction business and the coalition-appointed government.

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