Spontaneous Markets, Networks, and Social Capital:

Lessons from Africa

Marcel Fafchamps

University of Oxford *

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Recent years have witnessed a renewed interest in institutions as an essential ingredient for growth (The World Bank 2002). There is now an abundant literature documenting the role that institutions play in the development process (e.g. Keefer and Knack 1997, Acemoglu, Johnson and Robinson 2002). Market institutions in particular appear central to this process cit (e.g. North 1973, Acemoglu, Johnson and Robinson 2005), so much so that they are now commonly seen as a critical component of a good business environment. However, beyond generalities about courts and the respective merits of common law versus roman law, little practical advice is available on how to improve market institutions.

Detailed analysis of how markets operate in practice has been provided by John McMillan, Chris Woodruff, and coauthors for Vietnam and Eastern Europe (e.g. McMillan and Naughton 1996, Johnson, McMillan and Woodruff 2002, Johnson, McMillan and Woodruff 2000, McMillan and Woodruff 2000, McMillan and Woodruff 1999a, McMillan and Woodruff 1999b) and by myself – with various coauthors – for Sub-Saharan Africa (e.g. Fafchamps 2004, Bigsten, Collier, Dercon, Fafchamps, Gauthier, Gunning, Isaksson, Oduro, Oostendorp, Patillo, Soderbom, Teal and Zeufack 2000, Fafchamps 2002b, Fafchamps 2003, Fafchamps and Minten 1999, Fafchamps and Minten 2002, Fafchamps and Minten 2001). What this analysis reveals is that courts play a less important role than is often assumed. This may the case

*Department of Economics, University of Oxford, Manor Road, Oxford OX1 3UQ. Email: marcel.fafchamps@economics.ox.ac.uk. Fax: +44(0)1865-281447. Tel: +44(0)1865-281446.

even in developed economies, as has been shown for instance by Lisa Bernstein's insightful analysis of New York diamond trade and of US grain markets (e.g. Bernstein 1992, Bernstein 1996). But, for reasons that we will make clear in this paper, it is even more true in developing countries.

Policy makers need to understand the forces that shape market interactions in order to intervene effectively. As we will show, policy intervention regarding markets has to be context-specific. There is no 'one-size-fits-all' policy package that would suit all situations. Countries have to find the set of institutional improvements that best respond to their needs at a particular point of their institutional development. Policy makers cannot avoid investing in a proper understanding of how market works in practice.

The purpose of this chapter is to provide a conceptual framework with which to make sense of market institutions. The principles presented here are applicable to any country and to any market – e.g., for credit, insurance, or labor. But most of the discussion focuses on developing countries and it is couched in terms of markets for goods, such as manufacturing inputs or agricultural produce. Markets for such goods are usually thought to be less problematic than markets for credit, insurance and labor. Consequently they have received much less attention. The empirical evidence has nevertheless shown that the difficulties normally associated with credit, insurance, and labor markets are equally present in markets for goods. It is therefore useful take markets for goods as our starting point. Other markets can be seen as special cases of the principles outlined here.

Although we will be using equations in the pages that follow, this paper should not be thought of as a theoretical contribution. Math is used as a didactic device to illustrate a process or principle. Albeit the paper draws heavily from the theoretical literature, the choice of model is primarily determined by many years of experience studying markets in Africa and, more recently, in Asia. What is presented here is what I believe should be the backbone of any economic theory of markets in developing countries. The principles outlined in this chapter will help the practitioner see through many empirical puzzles, and they set a firm foundation on which to base policy.

I begin by describing the central role that contract enforcement plays in any form of exchange, but particularly in market exchange. Trust and breach deterrence are our focus. Section two starts by

examining the value of commercial relationships. We show how markets can spontaneously emerge without external enforcement. We then discuss information sharing and the various ways by which it facilitates or, potentially, hinders exchange. I examine different forms of information sharing and investigate under what conditions collective punishment can be self-enforcing. Section three is devoted to discrimination and networks. Many policy interventions in markets can be understood as attempts to correct inequitable market outcomes. I show that ethnic or gender bias arises naturally in all markets, but can have multiple origins. Which origin dominates determines whether an affirmative action policy – e.g., targeted credit – is likely to succeed. I conclude with an extensive application of the conceptual framework to policy issues. I cover not only issues surrounding courts and other formal market supporting institutions, but also how to upgrade informal markets and how to aim for efficiency and equity.

1. Markets and contract enforcement

The starting point to any understanding of market institutions is the realization that any market transaction is a contract. Being a contract, the transaction has a set of mutual obligations. There are many opportunities for cheating in trade, from misrepresenting quality to absconding with payment. For market exchange to take place, buyer and seller must trust each other. This is indeed what survey respondents say over and over again. But where does trust come from? When is it rational to trust someone?

1.1. Trust and breach deterrence

It is possible to think about trust not as an emotion but as a rational thought process. To trust someone 'rationally', we must believe that this person has adequate incentives to behave in a trustworthy manner. Several such incentives have been suggested in the literature. They include items such as guilt and shame, the fear of court action or of strong-armed enforcement, the unwillingness to spoil a valuable relationships, and the fear of losing one's reputation. We discuss these mechanisms in turn.

Guilt is internal to each individual. The ability to feel guilty for breaking a promise varies among individuals (Levitt 2006). Honesty is largely the by-product of upbringing, what psychologists call 'secondary socialization' (Platteau 1994b). It is also influenced by cultural values and religious beliefs. Shame is

a related concept. It is the capacity to feel bad if exposed as a cheater. Unlike shame, guilt does not require public knowledge and does not rely on information sharing.[1]

Enforcement mechanisms that rely on coercion are of two types: legitimate and illegitimate. The legal enforcement of contracts through courts ultimately relies on the state's monopoly over legitimate force. It is the state's backing that allows buyers to seize a debtor's assets and thus grants collateral value to unmovable property. Illegitimate force can also be used to enforce contractual obligations. Parties may resort to insults and violence directly, or hire thugs and bribe policemen to intervene. In the great majority of cases, the actual use of force is not required; implicit or explicit threats are sufficient.

Threats, however, are not always credible. The use of coercion is costly. For small transactions, legal costs are typically too high to justify court action. Even when legal costs are low relative to the size of the transaction, the buyer may have nothing to foreclose on. This is particularly true on developing countries where many people are poor. In these cases, the threat of court action is not credible and it fails to induce compliance.[2]

A third type of enforcement mechanism is based on quid pro quo: 'I continue to behave if you continue to behave'. It is the threat of retaliation that induces compliance with contractual obligations. For such a mechanism to work, parties must interact repeatedly over time. The simplest form of retaliation is the refusal to further transact. For this punishment to deter breach, the relationship must be something worth preserving. Retaliation may also be inflicted by a group of people who were not party to the contract. Group punishment requires a coordination mechanism and the circulation of information about contractual breach. Reputation is this coordination and information sharing device.

We now illustrate these concepts formally. Consider a contract by which a buyer promises to pay f at time 1 to a seller in exchange for a quantity k at time 0.[3] The set of subgame perfect contracting equilibria – i.e., of contractual promises backed by credible threats – is derived by backward induction. At time 1, the buyer decides whether or not to comply with the contract. The cost of complying varies

[1] Note that, for people to incur the cost of sharing information to shame people, they must derive some kind of morbid satisfaction from shaming others – e.g., retribution or self-righteousness.

[2] Unless the offending party is persuaded that the aggrieved party will go to court or will resort to violence even at a cost – e.g., because she wishes to preserve a reputation of toughness or because her moral sense compels her to do so. We ignore these complications here, the main point being that the threat of court action need not be credible.

[3] Other contractual obligations (delivery on time, warranty, quality, etc) can be analyzed in a similar manner.

with the buyer's type. For instance, a good agent finds it easier to pay on time than bad agent. The cost of complying also varies with unanticipated shocks. Let us write the cost to the buyer of paying f as $\pi(f, \tau, \varepsilon)$ where τ denotes the buyer's type and ε denotes the state of nature at time 1. Type $\tau \in \Delta$ is any characteristic of the buyer that is relevant to the contracting situation, like professional experience, technology, preferences, and honesty. The state of nature $\varepsilon \in \Sigma$ is any condition exogenous to the parties that was unknown at time 0 and makes payment harder or easier. If compliance is totally impossible, we say that $\pi(f, \tau, \varepsilon) = \infty$. Function $\pi(f, \tau, \varepsilon)$ allows for the possibility that the buyer's ability to pay after a shock depends on his or her type. We assume that only the buyer knows his or her type τ.

In case of non-payment, the buyer receives a payoff of 0 but incurs punishment. We consider four types of punishments that correspond to the categories discussed above: guilt, whose utility cost to the buyer is denoted $G(\tau, \varepsilon)$; various forms of coercive action including harassment, threats, and court action, whose cost to the buyer is denoted $P(\tau, \varepsilon, C)$; the suspension of future trade with the seller resulting in the loss $EV(\varepsilon, \tau)$; and damage to the buyer's reputation leading to a loss $EW(\varepsilon, \tau)$. The strength of $P(\tau, \varepsilon, C)$ depends on the form of the contract C, which we discuss in more detail below.[4] The term $EV(\varepsilon, \tau)$ represents the value of the relationship with the seller; $EW(\varepsilon, \tau)$ represents the value of lost reputation. We investigate $EV(\varepsilon, \tau)$ and $EW(\varepsilon, \tau)$ in great detail in the rest of this chapter. For now let us take them as given.

A rational buyer fulfills the contract if the cost of complying is smaller than all penalties combined, i.e., if:

$$\pi(-f, \tau, \varepsilon) \leq G(\tau, \varepsilon) + P(\tau, \varepsilon, C) + EV(\tau, \varepsilon) + EW(\tau, \varepsilon) \tag{1.1}$$

Whenever $\pi(f, \tau, \varepsilon) = \infty$ the buyer is unable to pay and the contract is breached. There are also situations in which $\pi(f, \tau, \varepsilon) < \infty$ and the buyer can pay, but equation (1.1) is not satisfied, making the buyer unwilling to pay.[5] Penalties in general depend on the buyer's type τ and on the realized state of

[4] E.g. whether formal guarantees were provided or whether contractual obligations were put down in writing to ease the burden of proof.

[5] The distinction between inability and unwillingness to repay is blurred in practice. For equity reasons, debtors often are regarded as unable to repay when compliance would be unduly costly, i.e., when $\pi(-f, \tau, \varepsilon)$ falls below a socially unacceptable level $B < \infty$. The reason is that insisting on payment in all circumstances would encourage unlucky debtors to engage in criminal activity in order to repay their debts. Here we consider that a buyer who is unable to pay is also unwilling to pay.

nature ε.[6] All these effects are accounted for in equation (1.1).

1.2. Willingness to trade

Now that we have a way of thinking about the buyer's incentive to pay, let us turn to the seller's incentives. The seller is asked to part with k at time 0 in exchange for a promise of payment f at time 1. Let $\Pi(k)$ and $\Pi(f)$ be the value of k and f to the seller, with $\Pi(k) > \Pi(f)$. When deciding whether to trust the buyer or not, a rational seller evaluates the chances of being paid, that is, the probability that equation (1.1) will be satisfied. In evaluating this probability, the seller uses all the information, denoted Ω, available at time 0: prior knowledge about the distribution of potential buyer types, information gathered over time through direct interaction with the buyer, and information conveyed by others about the buyer. Formally, let $F(\tau, \varepsilon|\Omega)$ be the joint cumulative distribution over τ and ε that captures the seller's beliefs given information Ω.

We want to known when the seller trusts the buyer. To this effect, assume that states of the world can be ranked so that, for any buyer type τ, $\pi(f, \tau, \varepsilon)$ is decreasing in ε. Further assume that the combined value of the four penalties listed in equation (1.1) is non-decreasing in ε. Both assumptions are intuitive: the first means that it is always easier to comply in good states; the second that a breaching buyer has more to lose in a good than in a bad state. Finally, assume that even the best buyers are occasionally unable to comply. With these assumptions, we can define a function $h(\tau)$ representing the shock ε^* at which a buyer of type τ is just indifferent between compliance and breach. Formally, define $h(\tau) = \varepsilon^*$ such that:

$$\pi(-f, \tau, \varepsilon^*) = G(\tau, \varepsilon^*) + P(\tau, \varepsilon^*, C) + EV(\tau, \varepsilon^*) + EW(\tau, \varepsilon^*) \tag{1.2}$$

For any shock ε above $h(\tau)$ the buyer pays; for any shock below $h(\tau)$ no payment is made.[7]

A seller decides to rationally trust the buyer if and only if:[8]

[6] For instance, unscrupulous agents have a low $G(\tau, \varepsilon)$. Others are hard to harass and coerce into paying their debts through legal (or illegal) means and have a low $P(\tau, \varepsilon, C)$. Others yet, like fly-by-night operators or firms on the verge of bankruptcy, have a short horizon and little interest in preserving their reputation – low $EW(\varepsilon, \tau)$– and their relationship with the seller – low $EV(\varepsilon, \tau)$.

[7] For notational simplicity, we ignore the possibility of partial payment.

[8] $(\underline{\tau}, \bar{\tau})$ and $(\underline{\varepsilon}, \bar{\varepsilon})$ denote the support of τ and ε, respectively.

$$E(\Pi(f)|\Omega) = \Pi(f)\Pr(payment) \tag{1.3}$$

$$= \Pi(f)\int_{\underline{\tau}}^{\bar{\tau}}\int_{h(\tau)}^{\bar{\varepsilon}} dF(\tau,\varepsilon|\Omega) \geq \Pi(k) \tag{1.4}$$

Equation (1.3) can be understood as follows. If the buyer's type were known to be, say, τ, the probability of being paid is equal to the probability that the exogenous shock ε is greater than $h(\tau)$, i.e., to $\int_{h(\tau')}^{\bar{\varepsilon}} dF(\varepsilon,\tau|\Omega)$. Since the seller does not know the buyer's type, the probability of being paid is computed over all possible types, hence the double integral in equation (1.3).

The seller may affect the probability of repayment by adjusting the form of the contract C.[9] Say there are N possible contract forms C_n, each with B_n. The seller must choose C_n that maximizes the value of the transaction net of transaction cost $E(\Pi(f)|\Omega) - \Pi(k) - B_n$. The optimal C_n may bypass formal guarantees if mechanisms other than $P(\tau,\varepsilon,C)$ ensure the respect of the contract. It is possible that, for all possible contractual forms C_n, $E(\Pi(f)|\Omega) - \Pi(k) - B_n < 0$. It follows that no contractual form can be found in which the seller can rationally trust the buyer. In this case, it is optimal for the seller to refuse to trade.

The buyer too must agree with the contract *ex ante*. A rational buyer does so if and only if the expected benefit from the contract is positive. The buyer knows his or her type, say, τ'. Let then $\pi(k,\tau')$ denote the value of receiving k to the buyer. In period 1, either the buyer pays and incurs a cost $\pi(f,\tau',\varepsilon)$, or does not pay and incurs the punishments listed in equation (1.1). Given the buyer's type, payment occurs with probability $\int_{h(\tau')}^{\bar{\varepsilon}} dF(\varepsilon|\tau')$. The buyer therefore agrees to the contract if and only if:

$$\pi(k,\tau\prime) \geq \int_{h(\tau')}^{\bar{\varepsilon}} \pi(-f,\tau',\varepsilon)dF(\varepsilon|\tau\prime) + \int_{\underline{\varepsilon}}^{h(\tau')} [G(\tau\prime,\varepsilon) + P(\tau\prime,\varepsilon,C) + EV(\tau\prime,\varepsilon) + EW(\tau\prime,\varepsilon)]dF(\varepsilon|\tau\prime) \tag{1.5}$$

[9] For instance, the seller may request that the buyer mortgages real assets to service the debt in case the buyer goes bankrupt.

Equation (1.5) states that the buyer's gain from the contract (first term) must be greater than the expected cost of complying when compliance occurs (second term) plus the expected cost of punishment when compliance does not occur (third term).

Equations (1.3) and (1.5) illustrate the tension inherent in any contract. On the one hand, if enforcement is too lenient, buyers will promise anything knowing that if they breach their promise, they will not be penalized. At the limit, if enforcement is zero, $h(\tau) = \bar{\varepsilon}$, the seller expects no payment, and no trade takes place. On the other hand, if enforcement is very harsh – say an infinite penalty – the expected cost of punishment is ∞ and thus larger than any gain from trade. For a large enough penalty, this is true even if the likelihood of being unable to pay is very low. As a result, the buyer refuses to promise something he or she is not absolutely sure to deliver. In both cases, no contract is concluded even though there may be significant gains from trade. For trade to occur, enforcement must be sufficiently strong to deter opportunistic breach but not so strong that it scares away all potential buyers.[10]

The same principles apply to all types of exchanges. Credit, insurance, and labor transactions inherently involve an element of time. This is true also of most services: the service provider fears providing the service without being paid, while the client fears paying without receiving the service. This is also true in simple purchases whenever payment is not instantaneous and the quality of the good cannot be inspected on the spot. When I purchase a tin of peas or a bottle of milk, I cannot assess the quality of the good inside the package. Consequently, I must trust the supplier – or trust the brand on a sealed package. This implies some kind of long-term relationship either with the brand or the supplier.

1.3. What have we learned so far?

From this overview of the contract enforcement problem, we have learned that penalties for breach of contract play a crucial role in making exchange possible whenever delivery and payment are not instantaneous. In spite of its simplicity, the conceptual framework developed so far delivers a number of important lessons:

[10] High enough penalties can also be used to attract low-risk types while discouraging high-risk types. This has been discussed extensively in the literature and need not be revisited here. As Stiglitz and Weiss (1981) have shown, this mechanism breaks down if agents can declare bankruptcy.

1. The ideal of an 'anonymous market' is a fallacy. To trust someone, you must know who he or she is. This does not mean that all trade is personalized. But being able to identify the other party is nearly always essential – if only to find them if there is a problem with payment, delivery, or warranty. One important function of business registration is precisely to facilitate unambiguous identification. Those who complain that banks do not lend to unregistered firms have never tried to collect from them. I remember repeatedly failing to locate informal firms in the Gikonba market in Nairobi, even though we supposedly had a precise geographical locator. Worse, neighboring businesses did not know them either. Overcoming identity theft is the bane of internet commerce. An immediate corollary of all this is that, if precise identification is problematic, agents may use alternative methods to identifying people, such as personal introduction or the creation of a business community in which individual agents are identified in person.

2. It is erroneous to think that 'perfect' contract enforcement can ever be achieved, or is even desirable. Existing legal codes understand this well since both roman law and common law traditions allow for excusable default ('force majeure' and 'Act of God'). Debt is no longer inherited – as it was during the Roman empire. Indenture contracts have long been abolished and prison for debt belongs in Dickens novels. Bankruptcy is allowed everywhere for limited liability firms. But countries differ with respect to personal bankruptcy – allowed in the US but not in much of Europe. They also differ in their attitude towards punitive damages, which are allowed in US law but frowned upon in continental Europe.

3. Some likelihood of breach of contract is unavoidable – and it must be anticipated by economic agents. In Zimbabwe, for instance, Fafchamps, Gunning and Oostendorp (2000) have shown that manufacturing forms hold large inventories to shelter themselves from late delivery resulting from transport problems. How much breach is acceptable probably depends on the context. In much of Africa, late payment is common and widely tolerated (e.g. Bigsten et al. 2000, Fafchamps and Minten 2001, Fafchamps and Gabre-Madhin 2006). Economic agents nevertheless go to great trouble to avoid it – most often by refusing any payment method other than cash in hand.

4. Legal institutions are most relevant for large anonymous transactions, such as the sale of a house.

They can provide a lot of security but typically at a high cost B_n. Small transactions in contrast are difficult to enforce through courts and, if they are anonymous, cannot rely on expected future trade. Small anonymous transactions must therefore be self-liquidating, with immediate cash payment and no delayed obligations. This form of trade, which I have called 'flea market economy' elsewhere, characterizes most trade in poor countries, especially in the so-called informal sector. Nearly all of Africa, for instance, is fed by such a marketing system. Needless to say, it is not very efficient as it raises the risk of theft and requires that transactions be conducted in person – not over the phone. This in turn raises transport costs and limits the size of firms, as traders are too busy running from market to market. It is difficult to envisage how agricultural markets could be improved without finding sources of increasing returns to foster concentration.

5. Commercial transactions can be enforced through repeated interaction alone, i.e., through $EV(\varepsilon, \tau)$ and $EW(\varepsilon, \tau)$. Courts are not necessary for markets exchange. Perhaps the most obvious example of this is the drug trade, which spans over many countries and churns billions of dollars in trade every year – without any court enforcement. When agents do not rely on courts to enforce contracts, formal guarantees are irrelevant and contracts do not even need to be written. Markets are decoupled from formal institutions. In Africa most trade among medium to large scale firms takes this form. The question then becomes: how can we understand markets without legal institutions? Do they follow the same rules? How can we improve them? Do we have to throw away informal institutions before putting in place formal ones? Doing so is likely to be fraught with problems.[11] Is there a way to upgrade informal markets? If so, how? Answering these questions is the focus of the remainder of this chapter. The key is to understand $EV(\varepsilon, \tau)$ and $EW(\varepsilon, \tau)$.

2. Relational contracting and reputation

It is clear from Section 1 that the fear of losing $EV(\varepsilon, \tau)$ or $EW(\varepsilon, \tau)$ can serve as deterrent to opportunistic breach of contract. But the question is: where does the value of $EV(\varepsilon, \tau)$ and $EW(\varepsilon, \tau)$ come

[11] In a sense we can see Idi Amin's expulsions of Asians from Uganda in the 1970's as an attempt to replace one market institution – Asian business networks – with native traders. As history tells us, the transition was far from smooth.

from? Why should economic agents fear losing a commercial relationship? There are so many other agents around, so why care? To this we now turn. We begin with $EV(\varepsilon, \tau)$.

2.1. A two agent example

To illustrate how a commercial relationship can be valuable, I begin with a simple example. Consider two agents, a client A and a supplier B. Assume that they are in a long-term relationship with no end in sight. Each month, A receives merchandises from B and must pay upon receipt of a monthly invoice. If A pays, his gain is his profit margin α. If A does not pay, his gain is the value of the good – normalized to 1 – plus the profit margin: $1 + \alpha$. The client has a discount factor:

$$\beta = \frac{1}{1+\delta} < 1$$

where δ is the (monthly) rate at which A discounts the future. If A pays, the relationship continues and more supplies arrive the following month. If A cheats, B stops supplying forever.

What is the value for A of the relationship with supplier B? If A does not pay, he gains 1 this month but B refuse to trade from then on. Hence A loses α in all future periods, that is, $\sum_{t=1}^{\infty} \beta^t \alpha = \frac{\beta\alpha}{1-\beta}$. It is not optimal for the client to cheat if:

$$1 + \alpha + \beta 0 \leq \alpha + \frac{\beta\alpha}{1-\beta} \tag{2.1}$$

$$1 \leq \frac{\beta\alpha}{1-\beta} \tag{2.2}$$

Inequality (2.1) is called the voluntary participation constraint or non-cheating constraint. Provided β is close enough to 1 (that is, provided the discount rate δ is small enough) and α is strictly positive, $\frac{\beta\alpha}{1-\beta}$ can be arbitrarily large. To facilitate comparison with the first section, note that inequality (2.1) can also be derived by in terms the instantaneous gain from cheating $1 + \alpha - \alpha = 1$ and the long-term loss from losing the relationship:

$$\pi(-f, \tau, \varepsilon) = 1 \leq \frac{\beta\alpha}{1-\beta} = EV(\varepsilon, \tau) \tag{2.3}$$

We see that the future value of the relationship is simply $\frac{\beta\alpha}{1-\beta}$. For β close enough to 1, the fear of losing

the relationship can, by itself, deter opportunistic breach.

2.2. An N-agent example

The above example illustrates the value of a relationship if no outside option exists at all. We now examine what happens if outside options exist. We imagine a situation with two groups of agents, clients and suppliers, trading repeatedly over time. As before, each transaction is such that payment takes place after delivery. There are two types of suppliers: good and bad. Good suppliers deliver quality inputs, bad suppliers do not. When the client buys from a bad supplier, he makes zero profit. When he buys from a good supplier, he makes α profit as before. The type of an individual supplier is not immediately observable. To discover the supplier's type, the client has to experiment, i.e., purchase a sample and try it out. Experimentation costs $c > 0$ and takes one period. The proportion of good suppliers in the total population is θ.

A client without supplier has to sample a supplier at random and incur cost c to find out whether the supplier is good or bad. If the supplier turns out to be good, they enter in a long-term relationship in the following period. If the supplier is bad, the client has to sample another supplier in the following month. The payoff of a client matched with a good supplier is as before:

$$V^M = \frac{\alpha}{1-\beta}$$

The expected payoff of a client when searching is:

$$V^S = -c + (1-\theta)\beta V^S + \theta\beta V^M$$

Solving for V^S, we obtain:

$$V^S = \frac{\theta\beta\alpha - c(1-\beta)}{(1-\beta)(1-\beta+\theta\beta)} \tag{2.4}$$

Now we can ask ourselves: would A cheat a good supplier? If A cheats, he gets an instantaneous payoff of 1 as before but the continuation payoff is different from the first example: he now gets V^S. The

non-cheating constraint now is:

$$1 + \alpha + \beta V^S \leq \alpha + \beta V^M = V^M \text{ or, written as in (2.3)} \tag{2.5}$$

$$\pi(-f, \tau, \varepsilon) = 1 \leq \beta(V^M - V^S) = EV(\varepsilon, \tau) \tag{2.6}$$

In this case, the value of the relationship $EV(\varepsilon, \tau)$ is the difference $\beta V^M - \beta V^S$. This is because a cheater still has a chance of forming a new relationship, but must incur a cost of search to do so.

Plugging equation (2.4) into the non-cheating constraint (2.5) enables us to rewrite the non-cheating constraint as:

$$1 \leq \beta \frac{c + \alpha}{1 - \beta + \beta\theta} = EV(\varepsilon, \tau) \tag{2.7}$$

We see that, if $\theta = 0$ (no replacement supplier) and $c = 0$, condition (2.6) boils down to (2.3). Consider for a moment what happens if $c = 0$. We see that $EV(\varepsilon, \tau)$ is a decreasing function of θ: the higher θ is, the lower $EV(\varepsilon, \tau)$ is. At the limit, if $\theta = 1$, condition (2.6) becomes:

$$1 \leq \beta \frac{\alpha}{1 - \beta + \beta} = \beta\alpha \tag{2.8}$$

If the profit margin is less than 100%, the value of the relationship is too small and condition (2.8) is violated. There is still a penalty, however, because matching is not immediate – i.e., the cheater loses α for one period. This is what condition (2.8) says.

Now imagine that the cheating client can immediately find a new supplier and does not have to wait. In our example, this case can be represented by letting $\theta = 1$ as before and by setting $c = -\alpha$, meaning that the client makes a profit α in period 1 instead of incurring a cost of c. The non-cheating constraint becomes:

$$1 \leq \beta \frac{-\alpha + \alpha}{1 - \beta + \beta} = 0$$

In this case, the relationship has no value. This is not surprising: since the supplier can be replace immediately at no cost, the fear of losing the supplier has no value 0. It follows that the fear of losing a business relationship can only deter opportunistic breach when replacing this relationship takes time

and/or is costly. This arises, for instance, if there is only one supplier, or if it is difficult to identify reliable suppliers.

2.3. Spontaneous market emergence

The contract enforcement mechanism we have described above rests on relational contracting. It is rudimentary yet extremely powerful. It implies that if search is time-consuming or costly, markets with delayed contractual obligations (credit, insurance, warranty) can arise spontaneously in a completely decentralized manner, without any external enforcement or information sharing. This idea was first applied to labor markets by Shapiro and Stiglitz (1984). Kranton (1996) contrasts relation-based markets with more impersonal exchange and shows that the former can be an equilibrium although the latter is in general more efficient.

It is beyond the scope of this chapter to explain in detail how markets can spontaneously emerge – the reader is referred to Fafchamps (2002b) for details – but the basic intuition is straightforward. Consider a drug addict who wishes to purchase his daily fix. He knows that there is plenty of adulterated supply on offer. He cannot tell without trying it, and consuming bad stuff is potentially lethal. In this environment, an addict who has found a reliable source of supply wants to continue buying from the same source. The difficulty of finding another reliable supplier is what gives value to the relationship – and allows the supplier to extend a little bit of credit to regular customers.[12] This called relational contracting, that is, repeated exchange between two parties over an extended period of time based on the relationship between them.

This market emergence process appears to be natural to most people, and arises spontaneously in many environments. Staal, Delgado and Nicholson (1997) describes the milk market in Addis Ababa is exactly the same terms, for instance. But this process has a surprising twist: what makes contract enforcement possible is the existence of search costs. Asymmetric information is what allows the emergence of markets for credit, insurance, and the like. Eliminate search costs and information asymmetry, and spontaneous contract enforcement collapses. This is worth emphasizing because information asymmetries and search

[12] Obviously, drug addicts also have a short time horizon and discount the future heavily. As a result, their β is small. But their α is probably quite large.

costs are usually viewed as evils that take us away from first best. But in our second best world, they are what make sophisticated markets possible.

Secondly, gains from trade cannot be eliminated by competition: if α falls to 0, clients have nothing to lose from cheating suppliers. Contract enforcement requires that buyers get rents. Too much competition can thus undo contract enforcement by eliminating these rents. This forces exchange to take a 'flea market' form. This means no orders, no cheque, no invoicing, no warranty, no credit, no insurance, just cash-and-carry. Flea markets – e.g., produce markets, road-side shops and services – litter the streets of all towns and cities of the developing world. This is perhaps a testimony to the strength of competition in undermining market development – or at least one form of it. To be fair, relational contracting can survive the pressure of competition, but only provided that trust reduces transactions cost relative to cash-and-carry – e.g., by allowing delivery to be organized over the phone.

Some markets inherently involve the passage of time and cannot operate on a cash-and-carry basis. This is true of credit, for instance. In a credit market based on relational contracting, competition for funds cannot bring borrowers' gain from trade below the level required to guarantee repayment. This limits the interest rate the lender is able to charge. With limited supply of funds, this naturally leads to rationing: some borrowers get a loan, others do not. Patronage relationships can be seen in this light as a way of solving the rationing problem: by forming a long-term relationship with a landlord, potential borrowers ensure future access to credit in a rationed world. The bottom line is that markets based on relational contracting do not behave in a conventional way.

2.4. The different kinds of reputation

Having clarified $EV(\varepsilon, \tau)$, the value of business relationships, we now turn to $EW(\varepsilon, \tau)$, the value of reputation. The word reputation has been used with different meanings in the literature, so it is imperative to first distinguish between them. Reputation is sometimes used as synonymous to relationship, 'If I cheat Jack, I will lose my reputation with him'. We have already discussed relationships, so we need not revisit this meaning here. A second meaning refers to the type of the agent or to the good they produce, as when we say 'Toyota is a car manufacturer with a good reputation'. What we mean is that Toyota produces reliable cars. We rely on the manufacturer's reputation to assess a hidden characteristic of the product

we buy – how long it will operate before breaking down. A third meaning of the word refers to the past behavior of an agent, as when we say 'Andersen lost its reputation when it helped Enron circumvent regulation on public securities'. In this case we are not talking about the quality of Andersen's service, but about the fact that they cheated. We focus on the last two meanings.

Reputation so defined implies the sharing of information. The reputation of Toyota cars for reliability is based the experience of past buyers. By sharing their driving experience with us, they help us draw inference about a hidden attribute of Toyota cars. Similarly, Andersen's cheating behavior is known to us because it was printed in the newspapers. It is because this information has been circulated that Andersen has lost customers. If the information had been kept secret, it would only have affected Andersen's relationship with Enron and the Securities Commission. But the two types of reputation have different effects on markets. We examine them in turn.

2.4.1. Sharing information about types

To illustrate the role of reputation about type, let us expand our earlier model to allow information sharing. Assume that clients share information about suppliers' types. Does this affect incentives to cheat? The answer is yes because, when clients share information on good and bad suppliers, they no longer have to incur the screening cost c.[13] The non-cheating constraint becomes:

$$\begin{aligned} 1 &\leq \beta \frac{\alpha}{1-\beta+\beta\theta} \\ &< \beta \frac{c+\alpha}{1-\beta+\beta\theta} \text{ if } c>0 \end{aligned} \tag{2.9}$$

We see that sharing information about types reduces incentives to respect contractual obligations. This is because it reduces screening costs and thus reduces the penalty for cheating. This kind of reputation effect makes contract enforcement more difficult.

[13] Strictly speaking, screening costs have to be incurred once – the first time a supplier is approached by a client. But in the long run, this cost is a vanishingly small proportion of expected average payoffs and can be ignored.

2.4.2. Sharing information about behavior

If we assume instead that suppliers share information about the past behavior of clients, we get the opposite result: reputation can make contract enforcement easier.

To see why, suppose that (good) suppliers agree never to sell again to clients who have not paid in the past. In the literature, the situation in which economic agents collude to exclude cheaters from future trade goes by various names. Kandori (1992) calls it a reputational mechanism or equilibrium. Greif (1993) calls it a multilateral punishment strategy. Sometimes it is also called collective punishment or exclusion. This kind of enforcement mechanism has many problems that we discuss more in detail later. For now let us assume that collective exclusion is an equilibrium.

With this assumption, a cheating client can never buy from a good supplier ever again. We are back to our first model, even though there are many agents. The short-term gain from cheating is, as before, 1. The long term loss from cheating is all future trade, i.e., $\sum_{t=1}^{\infty} \beta^t \alpha = \frac{\beta\alpha}{1-\beta}$. Consequently, in this case, we have:

$$EV(\tau,\varepsilon) + EW(\tau,\varepsilon) = \frac{\beta\alpha}{1-\beta} > \beta\frac{\alpha}{1-\beta+\beta\theta} \tag{2.10}$$

from which we see that sharing information about behavior raises the penalty for cheating and thus provides better contract enforcement incentives.[14]

2.5. The information sharing process

Collective punishment assumes that agents share information about all past behavior of all agents. This seems like an impossible requirement to satisfy, given the enormous amount of information processing

[14] The split of $\frac{\beta\alpha}{1-\beta}$ into its two components $EV(\tau,\varepsilon)$ and $EW(\tau,\varepsilon)$ is a bit arbitrary in this case. But it is useful to think of it as having two distinct parts: what the client would economize by not having to look for another supplier, which is given by $\beta\frac{c+\alpha}{1-\beta+\beta\theta}$, and lost future trade opportunities because other suppliers refuse to sell. We also have to take into account the fact that, since no supplier would agree to sell, it is not in the client's interest to incur screening cost c. We obtain:

$$EV(\tau,\varepsilon) = \beta\frac{\alpha}{1-\beta+\beta\theta} \tag{2.11}$$

$$EW(\tau,\varepsilon) = \frac{\beta\alpha}{1-\beta} - \beta\frac{\alpha}{1-\beta+\beta\theta} = \frac{\beta^2\theta\alpha}{(1-\beta)(1-\beta+\beta\theta)} \tag{2.12}$$

that this would require. Kandori (1992) shows that information processing can be dramatically simplified by resorting to individual specific labels.

Kandori's idea is to summarize information about past behavior into a single variable or label $z_i(t)$ for each client i. This variable takes integer values between 0 and T. If a client has not cheated in the past, $z_i(t) = 0$. If a client cheats, he is punished for T periods. In the first punishment period, $z_i(t) = T$, in the second punishment period, $z_i(t+1) = T-1$, etc, until the punishment phase is over, at which time $z_i(t+T+s) = 0$ for all s. If a player cheats during the punishment phase, the punishment is restarted. Kandori shows that this simple strategy can enforce cooperation in a large class of repeated interaction games that includes our buyer-seller game.

This equilibrium to resemble the way credit reference agencies operate. They indeed simplify the information about each agent i with a credit report showing when the agent last 'cheated' (e.g., paid late or not at all). This information is kept on the agent's record for a set number of years T, after which time it is erased.

2.5.1. Reputation and meta-punishment

Reputational punishment have received an inordinate amount of attention in the literature, so much so that it is customarily believed that collective punishments are easy to sustain and are pervasive in practice. Any evidence that economic agents share information is usually taken to imply that they collude to exclude cheaters, often without acknowledging the possibility that they may exchange information about types, not about cheaters. In my own empirical work, I have found only limited evidence of reputational punishment. My interpretation for these findings is that a coordinated punishment strategy is difficult to sustain.

To illustrate this difficulty, consider suppliers' incentives to share information. Suppose client A has not paid one of his suppliers. This supplier tells the others. Suppliers have agreed not to deal with cheaters. Clients know this. Now A approaches supplier B, promising he will not cheat anymore. The question is: is it in B's interest to refuse to deal with A?

To answer this question, imagine that B agrees to trade with A and consider A's incentive to cheat B. Since A is already blacklisted by all other suppliers, if he were to cheat on B he would not find any other

supplier to trade with afterwards. Consequently, A's incentive to pay is the value of the relationship:

$$1 \leq \frac{\beta\alpha}{1-\beta}$$

This is the same non-cheating constraint as (2.10): A has as much incentive to pay B as any other client. From B's perspective, if (2.10) is satisfied for all clients, then it also ensures that A will pay. In other words, A's future behavior is as reliable as any other client, irrespective of his past cheating. Now consider B's incentive to trade with A. The alternative is to refuse to trade and wait for another client. To the extent that it is costly for B to refuse to trade and wait, it is in his interest to trade with A. Hence it is not in the interest of suppliers to participate to collective punishment.

This problem is known as the meta-punishment problem: to incite suppliers to jointly punish cheaters, those who refuse to punish must themselves be punished. If other suppliers could impose some social sanction on B, they might be able to force B to refuse A and wait. The problem with meta-punishment is that trade between A and B need not be observable to other suppliers. Since it is not be in the interest of either A or B to advertise the fact that they are circumventing the sanction, meta-punishment is only implementable if suppliers observe each others' dealings. This requirement to some extent runs contrary to the requirements of competition, which assume some secrecy. Meta-punishment is thus difficult to satisfy for commercial contracts.

If meta-punishment is impossible, collective punishment unravels. Even though there is information sharing about past cheating, suppliers cannot coordinate their action to permanently exclude cheaters. We fall back on the N-agent case with non-cheating constraint:

$$1 \leq \beta\frac{c+\alpha}{1-\beta+\beta\theta}$$

2.5.2. Self-enforcing collective punishment

The difficulty of enforcing collective punishment originates in the assumption that clients are identical. The fact that a client has cheated in the past does not reveal anything about the client. Since his payoff is unchanged, his incentive to cheat again is also unchanged. If the threat of exclusion deters cheating

from all clients, it also deters future cheating by past cheaters. This is what creates an incentive problem for suppliers.

Things are different if clients come in several types τ. Say there are two types of clients, good and bad. Good clients are as before. Bad clients are very impatient – low β – and cannot resist the temptation to cheat.[15]

Suppose A does not pay B. The behavior of A now serves as a signal regarding A's type: A is a bad client, a cheater because, in equilibrium, only bad clients cheat. Cheating thus reveals one's type. Now suppose that B tells other suppliers. Will other suppliers refuse to sell to A? The answer is yes: past behavior predicts future behavior through inference about types. When cheating is interpreted as a signal of a bad type, sharing information about past behavior results in collective punishment without meta-punishment. Collective punishment is self-enforcing.

In the framework of our earlier model, this is equivalent to saying that the probability of payment depends on the client's type. Let the proportion of bad types in the economy be μ. If the type is unknown, the supplier must take a chance and her payoff is:

$$E(\Pi(f)|\Omega) = \Pi(f)\Pr(payment) \tag{2.13}$$

$$= \Pi(f)(1-\mu) + 0\mu \tag{2.14}$$

However, if the type of the client is known, the probability of payment is either 1 (if the client is good) or 0 (if the client is bad).

This model can be extended to the case in which clients' type changes over time, e.g., they do not pay because they are going bankrupt. The same mechanism applies: if information about their behavior circulates, they will be excluded from future trade in a decentralized, self-enforcing manner.[16]

The appeal of this approach is that it accords with field observations. Based on micro surveys of

[15] Alternatively, we can assume that they are incompetent so that their profit margin is low or negative – low α. Consequently, bad clients have less incentive to pay.

[16] The model could be generalized to a situation in which the enforcement mechanism is guilt, not relationships or reputation. Certain agents are 'honest' in the sense that they would feel very bad if they cheated while others are 'dishonest' in the sense that they would not care. Past behavior can then be used to infer someone's honesty, i.e., innate or acquired capacity to self-inflict punishment by feeling guilty. These issues are discussed in detail in (e.g. Platteau 1994a, Platteau 1994b). This interpretation seems to be the most natural one, the one we would probably volunteer if asked to explain how we interpret cheating.

manufacturing firms and agricultural traders in many countries, Fafchamps (2004) finds no evidence of coordinated exclusion of cheaters in Sub-Saharan Africa. No respondent ever described a refusal to trade as punishment for past breach, and no evidence was found of meta-punishment or of coordination to punish. Survey respondents display little fear that failing to pay a supplier would affect their credit among other suppliers. But discussions with numerous respondents indicate that they interpret information about non-payment to other suppliers as possible indication of liquidity problems. If they fear a client is on the verge of bankruptcy, they withdraw their credit. Respondents nevertheless understand that withdrawing credit for fear of bankruptcy can be self-fulfilling. For this reason they act with caution and dislike spreading rumors. The evidence shows that, although there is much sharing of information about trade opportunities and agent type, little information is exchanged about breach of contract. Could it be that there are incentive problems associated with the sharing of information?

2.5.3. Incentives to share information about cheaters

There are many incentive problems associated with the circulation of information about cheaters. First, it must be possible to identify agents unambiguously. We have already discussed this. Secondly, cheated suppliers do not have an incentive to share the information with others. One reason is that, by telling other suppliers who the cheater is, they actually help competitors. Even if this is not a consideration, sharing information requires an effort without immediate counterpart. As a result it is difficult to incite suppliers to circulate accurate and current information about breach of contract. Finally, agents may seek to 'capture' clients by telling other suppliers that they are cheaters.

In my empirical work, I have encountered examples of all of the above phenomena, so much so that I am convinced they explain why information sharing is not more prevalent. Milgrom, North and Weingast (1991) – hereafter MNW – propose an elegant solution to the incentive problems surrounding the information sharing process. This solution is meant to mimic an old institution, called the Law Merchant, who is the repository of information about past breach of contract. This is similar to Kandori credit reference bureau argument, but MNW focus on the incentives for buyers and sellers to refer to the Law Merchant. The problem is to incite agents to report accurate information about breach of contract. In the model, this is achieved by making the Law Merchant adjudicator of disputes. In this manner, he

is provided with accurate information about past cheating. The punishment for breach of contract is a fine. Cheaters are asked to pay a judgement that exceed the gain they made from cheating. Part of this payment goes to the cheated, who thus has an incentive to report cheating. In equilibrium nobody cheats but, if they do, they pay their fine in order to clear their name and be allowed to trade again. The Law Merchant keeps track of unpaid judgements.

According to MNW, the Law Merchant proposes to buyers and sellers a combined contract whereby agents pay a query fee to learn whether their client i has any outstanding judgement. This fee then enables them to seek the adjudication of the Law Merchant in case of contractual dispute. Suppliers who fail to consult the Law Merchant before contracting are refused help. This part is essential because, in equilibrium, there is no cheating. Consequently, if the Law Merchant could not collect a query fee, he would generate no income and thus would disappear. LNW show that this system is incentive compatible and can enforce impersonal spot contracts.

In my empirical work, I have not encountered any Law Merchant. But I have observed that credit reference agencies rely critically on publicly available information about contractual cases brought to court. This alone may explain why, of 9 African countries that I studied, the only one with a large credit reference agency was Zimbabwe, which also was the only country in the group where unpaid debts were customarily brought to court.[17] Private arbitration has been said to mimic Law Merchants. I have hardly observed any use of private arbitration in Africa, although it may be relevant elsewhere. What I have observed is that credit reference agencies often offer credit recovery or debt mediation services. Just as in the case of the Law Merchant, these activities provide them with valuable (and accurate) information about cheating.

2.6. Flexibility and breach

So far, we have regarded breach of contract as simple affair: the client either pays or does not pay. If he does not pay, this signals he has a bad type – or is on the verge bankrupt. In practice, things are not so clear-cut because all economic agents are faced by shocks ε. As a result, even good clients sometimes

[17] This was before 2000.

cannot comply with the contract.

A more accurate representation of reality is to assume that bad clients never pay but that, with some probability, good clients find themselves temporarily unable to pay. Observing non-payment raises the probability that the client is a bad type, but not with absolute certainty. To make this clear, consider the following situation. Good clients have a probability $\sigma < 1$ of not paying; for bad clients, the probability is 1. Furthermore, each period, good clients have a probability σ of becoming bad.

Supplier B has been selling to A for some time and has always been paid. But now B is not paid. What should B do? This depends on whether A has become bad or not: if A has become bad, B should stop supplying; otherwise, B should continue selling to A. What are the odds that A has become bad?

$$\Pr(A \text{ is bad}|A \text{ cheated}) = \frac{\Pr(A \text{ is bad})}{\Pr(A \text{ cheated})} = \frac{\gamma}{\gamma + (1-\gamma)\sigma}$$

Suppose further that suppliers make a positive profit margin on each sale and let V^T denote the supplier's expected utility from selling to a good client.[18] For simplicity, assume that it takes exactly 1 periods for the supplier to find a good new client. The supplier must choose between keeping the client and risk losing 1 a second time, or reject the client and lose potential sales for 1 period. If A has failed to pay once, it is in the interest of the supplier to continue selling to this client if:

$$\begin{aligned} \frac{\gamma}{\gamma + (1-\gamma)\sigma}(-1) + \frac{(1-\gamma)\sigma}{\gamma + (1-\gamma)\sigma}V^T &\geq 0 \text{ or} \\ (1-\gamma)\sigma V^T &\geq \sigma \end{aligned}$$

which, for a large enough V^T and a small enough σ, is satisfied. In this case, it is in supplier B's interest to be flexible, that is, to allow A to skip payment once. Breach of contract does not automatically destroy the relationship.

Flexibility does not last forever, however. Suppose that A cheats a second time immediately after-

[18] This is itself a combination of the probability of being paid, etc. But these details are not essential to the point I am trying to make, so they can be ignored for now.

wards. What is now the probability that A is bad? Bayes law says that:

$$\Pr(T_1|E) = \frac{\Pr(E|T_1)\Pr(T_1)}{\sum_{j=1}^{2}\Pr(E|T_j)\Pr(T_j)}$$

Let E be 'cheat twice in a row' and let T_1 be 'A is bad' and T_2 be 'A is good'. We have:[19]

$$\begin{aligned}\Pr(A \text{ is bad}|\text{cheat twice}) &= \frac{1\gamma}{1\gamma + \sigma\sigma(1-\gamma)} \\ &= \frac{\gamma}{\gamma + (1-\gamma)\sigma^2}\end{aligned}$$

Since $\sigma < 1$ by assumption, we see that:

$$\Pr(A \text{ is bad}|\text{cheat once}) = \frac{\gamma}{\gamma + (1-\gamma)\sigma} < \frac{\gamma}{\gamma + (1-\gamma)\sigma^2} = \Pr(A \text{ is bad}|\text{cheat twice})$$

This is because a good client is unlikely to cheat twice in a row. The supplier's incentive to continue selling to A now becomes:

$$\begin{aligned}\frac{\gamma}{\gamma + (1-\gamma)\sigma^2}(-1) + \frac{(1-\gamma)\sigma^2}{\gamma + (1-\gamma)\sigma^2}V^T &\geq 0 \text{ or} \\ (1-\gamma)\sigma^2 V^T &\geq \sigma\end{aligned}$$

Since the left-hand side is smaller, the supplier is less likely to sell again to A.

This argument can be extended to N cheating periods simply by raising γ to the Nth power. We have:

$$\lim_{N\to\infty} \Pr(A \text{ is bad}|\text{cheat } N \text{ times in a row}) = 1$$

with very rapid convergence to 1 if γ is small.

This demonstrate that suppliers may be flexible for a while but, after some time, will gradually begin to suspect that A has become a bad client. How long the seller is willing to give the buyer the benefit

[19] I have simplified this a bit. To be completely correct, we would have to allow for the fact that A cheated the first time because of a shock and the second time because he switched type. This would only complicate the math without changing the qualitative conclusion.

of the doubt depends on σ: if the business environment is very risky and σ is large relative to γ, many business face difficulties meeting their short-term financial obligations but they are accommodated by their creditors. This in turn generates financial uncertainty in the creditors' business as well, generating a multiplier effect. Another source of multiplier effect arises because it is easier for firms to claim having been hit by a shock when in fact they were just sloppy or disorganized. The risk sharing benefit that flexibility confers generate the standard moral hazard problem associated with any insurance: the insured has less incentive to apply proper care. Bigsten et al. (2000) documents that African manufacturing firms first adopt a conciliatory attitude towards non-paying clients. Only if negotiation fails do they sever the business relationship or seek reparation in court. Similar results for agricultural traders are reported in Fafchamps and Minten (2001).

2.7. What else have we learned ?

The excursion into the world of relational contracting and reputation has taught us a few useful lessons:

1. Commercial relationships are valuable only if they are not easily replaceable, for instance because of screening costs or because of search time. The more bad agents there are, the more valuable relationships are, and the easier it is to sustain contracts on the strength of relationships alone. Relational contracting is the dominant form of contract enforcement in Sub-Saharan Africa.

2. Contrary to what is often believed, information sharing does not necessarily improve contract enforcement. Sharing information about types weakens contract enforcement because it reduces search costs and thus lowers the value of relationships. Sharing information about past behavior is necessary but not sufficient for collective punishment of cheaters. Exclusion of cheaters is not decentralizable unless economic agents can observe other agents' trading partners, or unless agents interpret breach of contract as a sign of impending bankruptcy. Empirical work in Africa uncovered no evidence of coordination devices to punish cheaters, but found some indications that breach raises concerns about the financial viability of the debtor.

3. In a risky business environment, such as the one characterizing much of the developing world, economic agents face many shocks that make it difficult for them to comply with contractual

obligations. This observation applies to payment but also to on-time delivery, quality control, worker absenteeism, etc. Firms operating in this environment show more flexibility in the respect of contractual obligations, preferring to renegotiate contracts when difficulties arise rather than imposing a rigid interpretation of the contractual terms. Foreign firms entering such environment may be surprised by the difference in business culture. Biggs, Moody, von Leewen and White (1994), for instance, documents the indignation of large US firms trying to source garment products from sub-Saharan Africa and experiencing failed deadlines and inconsistent quality standards. What is normal in Africa clearly is not in the US.

3. Discrimination and Networks

In Section 2 we discussed information sharing and its effect on contract enforcement. The presence of good and bad types was found essential to grant value to commercial relationships and to support decentralized exclusion of cheaters. The coexistence of multiple types raises other issues which we discuss here. We first examine how trust can be built over time when there are many types of clients. The problem here is con artists. Next we allow for observable characteristics that are correlated with hidden type and we introduce the concept of statistical discrimination. Finally, we discuss the network effects that arise as a result of multiplicity of types and information sharing within networks.

3.1. The building of trust

So far we have assumed that economic agents can ascertain each other's type by incurring a screening cost c. But we have not discussed where this cost comes from. To this we now turn.

3.1.1. Two types

Let us start with a simple example. Suppose that suppliers share information perfectly and that collective punishment is enforced via meta-punishment.[20] There are two types of clients, good and bad. Good

[20] Alternatively, assume a single monopolistic supplier.

clients have discount factor β_h while bad clients have discount factor β_l with

$$\beta_h > \beta_l$$

Being more patient, good clients value long-term gains more and thus have less incentive to cheat. To make this clear, assume that:

$$\frac{\beta_l \alpha}{1-\beta_l} < 1 < \frac{\beta_h \alpha}{1-\beta_h} \tag{3.1}$$

It follows that bad clients cannot be deterred from cheating. How can suppliers force bad types to reveal themselves?

One possibility is for suppliers to propose a small transaction, for instance by granting a small amount of supplier credit. By reducing the size of the transaction, the supplier reduces her exposure in case of non-payment. Let κ be the size of the transaction. What is the smallest transaction required to induce the bad agent to reveal his type by not paying?

If κ is chosen too small, bad clients may choose to pay the small transaction only to cheat on a larger transaction later. To see this, suppose that the supplier first sells κ and, if paid, sells 1. What is the bad client's incentive to mimic good behavior in the first period to cheat more later? By cheating right away, the bad client gets κ. By cheating later, the bad client gets $\alpha\kappa$ now and $\beta_l 1$ next period. To induce the bad client to reveal his type in the first period, κ must be large enough that cheating now is better for the bad client:

$$\begin{aligned} \kappa &\geq \alpha\kappa + \beta_l \\ \kappa^* &\geq \frac{\beta_l}{1-\alpha} \end{aligned} \tag{3.2}$$

$\kappa^* < 1$ since, by inequality (3.1), a size 1 transaction induces immediate cheating by bad clients.[21] Good

[21] To see this, note that (3.1) can be rewritten:

$$\beta_l \alpha < 1 - \beta_l$$

If $\kappa = 1$, (3.2) becomes:

$$\alpha < 1 - \beta_l$$

which is clearly always satisfied if (3.1) is satisfied.

clients repay any size transaction since:

$$1 < \frac{\beta_h \alpha}{1-\beta_h} \Rightarrow \kappa < \frac{\beta_h \alpha \kappa}{1-\beta_h} \text{ for any } \kappa$$

Having found κ^*, we now easily derive c as the expected loss associated with the 'test' transaction κ^*. Suppliers have a unit profit margin of λ on repaid transactions. If the proportion of bad clients in the economy is σ, we have:

$$\begin{aligned} -c &= -\sigma\kappa^* + (1-\sigma)\lambda\kappa^* \\ c &= \kappa^*(\sigma - (1-\sigma)\lambda) \end{aligned}$$

A longer trial period may be better than a one-period trial period. Intuitively, insisting on a longer trial period enables the supplier to reduce κ^* because the impatient bad client has to wait longer before being able to fully cheat the supplier. For instance, if the trial period lasted 2 periods, the optimal level of κ would be given by:

$$\begin{aligned} \kappa &\geq \alpha\kappa + \beta_l \alpha\kappa + \beta_l^2 \\ \kappa^{**} &\geq \frac{\beta_l}{1-\alpha-\beta_l\alpha} \end{aligned}$$

which is clearly smaller than (3.2). When choosing how long the trial period should be, the supplier must trade lower exposure with reduction in trade volume in case the client turns out to be a good one. We leave this as an exercise. In practice, trial periods in commercial relationships last from 3 to 6 months in sub-Saharan Africa. Trial periods of a similar length are found in labor contracts.

3.1.2. N types

Now suppose that there are N types ranked $\beta_1 < \beta_2 < ... < \beta_N$. Partition these types into all the good types G for whom

$$1 \leq \frac{\beta_h \alpha}{1-\beta_h} \text{ for all } h > t$$

and all the bad types for whom

$$\frac{\beta_l \alpha}{1-\beta_l} < 1 \text{ for all } h \leq t$$

The index t denotes the most patient bad type. Obviously, we know from (3.2) that type t is the hardest to force to reveal his type because it requires the highest κ^* to induce cheating.

One possibility would be for the supplier to set

$$\kappa^* = \frac{\beta_t}{1-\alpha}$$

in which case all bad types would reveal themselves in period 1, and the supplier would be fully informed. But this is an expensive strategy for the supplier because it requires a high exposure κ^*. If there are lots of cheaters in the economy, this is probably too expensive. Another approach is to start small, first forcing the really bad types to reveal themselves. Then in the second period, the supplier would raise κ^* slightly to induce another batch of bad types to reveal themselves. And so on until all bad types have been revealed. It is also conceivable to lengthen the trial period for each group in order to further reduce exposure, albeit at the cost of delaying full trade.[22]

The exact shape of the screening strategy depends on the precise distribution of types – i.e., their level of impatience and the proportion of clients of various types – as well as on the supplier's margin λ. We need not explore this further. All we need to remember is that this gradual screening process closely resembles what survey respondents in Africa usually call the 'building of trust' (Fafchamps 2004). In practice, human beings are much better at inferring type than the crude model used here. They may rely on facial expression, verbalization, and various interpersonal interactions to improve screening (Cornell and Welch 1996).

3.2. Statistical discrimination

As we have just seen, building trust can be a lengthy and complicated process. It is reasonable to expect economic agents to use any information that reduces screening costs by facilitating inference.

[22] See also Watson (1999) for an in depth covereage of this issue.

One such possibility arises whenever agents observe external characteristics that are correlated with unobserved type (e.g. Akerlof 1985, Coate and Loury 1993). The most likely candidates are characteristics that are easily observable, such as gender, race, ethnicity, religion, appearance, age, and firm size. Any characteristics that is correlated with hidden type, even slightly, can be used to improve inference. As a result, populations with different observable characteristics end up being treated differently by the market. This is called statistical discrimination.[23] We expect statistical discrimination to be pervasive in all economic transactions where hidden type or hidden quality are at issue – labor, credit, insurance, rentals, goods and services – pretty much all markets.

Statistical discrimination is not equitable since people are treated differently purely on the basis of external characteristics that are, by themselves, irrelevant for contractual performance. The equity loss due to statistical discrimination is particularly large in markets driven by relational contracting because failure from being selected has long-term consequences. Yet statistical discrimination is individually rational for the person doing the screening. Furthermore, in many cases is (second-best) Pareto efficient. It is therefore pervasive. Short of eliminating the information asymmetry that is the cause of discrimination, it is difficult to uproot.

There is abundant empirical evidence that business communities in Africa are not representative of the population at large (Fafchamps 2002a). Minorities – some of them native, some of them not – tend to be overrepresented among middle and large scale entrepreneurs, those that operate outside the flea market economy. While there often are historical reasons for why a particular minority has become overrepresented in a particular business, evidence suggests that overepresentation is long lasting and even survives efforts to dismantle it (e.g. Fafchamps 2002a, Himbara 1994). It is therefore no surprise that many development projects seek to correct welfare imbalances resulting from such discrimination, for instance by targeting assistance towards minorities, women, microenterprises, scheduled castes, etc. Understanding statistical discrimination is essential to a proper grasp of market institutions.

Statistical discrimination can manifest itself in various ways. We focus here on the simplest form,

[23] Statistical discrimination can also arise between two observationally distinct population that are on average identical but have a different variance. To see this, consider an employer. If the employer is looking for exceptional talent – the upper tail – he is better off sampling from the more variable population. If the employer is trying to avoid exceptionally bad workers – the lower tail – he is better off sampling from the less variable population.

which is simply to exclude B clients from trade.[24] To illustrate this possibility in our modeling framework, assume that there two types of clients, good and bad and two ethnic groups, B and W. The share of B clients in the population is b. Without loss of generality, assume that the proportion of bad types in the B population is higher than in the W population:

$$\sigma_B > \sigma_W$$

Consider the decision of a supplier approached by an unknown B client. The supplier can choose either to screen the client, or to reject the client and wait until next period in the hope of being faced with a W client. For simplicity, assume that the screening exposure κ is the same for both populations of client and that screening is done in one period.[25] If the supplier screens the B client, his payoff is:

$$V^B = \sigma_B(-\kappa + b\beta V^B + (1-b)\beta V^W) + (1-\sigma_B)(\lambda\kappa + \beta\frac{\lambda}{1-\beta}) \tag{3.3}$$

where λ is the supplier's profit margin and β his discount factor. If the client is bad, the supplier loses κ and is matched with a new client in the following period, who could either be B or W. This is captured by the first term. The second term is what happens if the client is good, in which case the supplier earns margin λ on a transaction of size κ today and gets λ thereafter.

A similar equation can be written for V^W:

$$V^W = \sigma_W(-\kappa + b\beta V^B + (1-b)\beta V^W) + (1-\sigma_W)(\lambda\kappa + \beta\frac{\lambda}{1-\beta}) \tag{3.4}$$

It is immediately obvious that $V^B < V^W$ since $\sigma_B > \sigma_W$.

[24] It possible to show that, for certain parameter values, price discrimination obtains instead. In this set-up, B agents have to accept a lower profit margin α (and thus must guarantee suppliers a higher profit margin λ) in order to convince suppliers to screen them. There also exist equilibria in which suppliers screen only a proportion of B agents, not all. See Fafchamps (2003) for details.

[25] Because $\sigma_B > \sigma_W$, the supplier may opt for a different screening strategy for each group, e.g., by choosing a longer screening period and lower κ for B clients. See Fafchamps (2003) for details.

If the supplier refuses to screen B prospective clients, the payoffs are:

$$\bar{V}^B = b\beta\bar{V}^B + (1-b)\beta\bar{V}^W \tag{3.5}$$

$$\bar{V}^W = \sigma_W(-\kappa + b\beta\bar{V}^B + (1-b)\beta\bar{V}^W) + (1-\sigma_W)(\lambda\kappa + \beta\frac{\lambda}{1-\beta}) \tag{3.6}$$

The question is: does the supplier refuse to screen B clients? This is an important question because such discrimination is bound to be deeply resented by good B types.

To answer this question, we first solve the system made of (3.3) and (3.4). This yields the value of V^B. We then solve the system made of (3.5) and (3.6). This yields $\bar{V}^B$. We then compare V^B to $\bar{V}^B$ and check whether it is ever the case that the second is larger than the first. Let us first consider the case where $\kappa = 1$. Skipping the algebra, we obtain:

$$V^B - \bar{V}^B = [\lambda(1-\sigma_B) + \sigma_W(1-b)\beta - \sigma_B(1-b\beta)]\, M$$

where M is a long expression guaranteed to be positive. The sign of $V^B - \bar{V}^B$ depends upon the sign of the expression in brackets. This expression increases with λ: the higher the supplier's margin, the more he has to lose by delaying the chance of finding a good client. The expression is also decreasing in $\sigma_B - \sigma_W$: the higher the proportion of bad clients in the B population, the less likely the supplier is to screen prospective B clients.[26] Finally, σ_B does not have to be much larger than σ_W for discrimination to arise: if the supplier is very patient but the margin λ is small, even a small difference between σ_B and σ_W results in discrimination.

To see the effect of screening cost κ, consider the formula for $\kappa \neq 1$:

$$V^B - \bar{V}^B = \{\kappa\,[\lambda(1-\sigma_B) + \sigma_W(1-b)\beta - \sigma_B(1-b\beta)] + (1-\kappa)\beta\lambda(1-\sigma_B)\}M$$

The expression now has two terms, the second of which is always positive. It follows that, when the cost of screening κ is small, the supplier always prefers to screen. This is because not screening delays finding

[26] To see this, note that, since β is close to 1, $(1-b)\beta \simeq 1 - b\beta$.

a good client.

An immediate policy implication is that reducing the cost of identifying good B agents should reduce if not eliminate discrimination. There are many examples of such institutions, such as credit reference agency, a certification or vetting program, personal recommendation etc. Of course, by helping good B agents to distinguish themselves from bad B agents, bad B agents find it harder to be screened. By extension, if only some good B agents benefit from vetting, unvetted good B agents are even more likely to be discriminated against.

3.3. Insiders and outsiders

Processes other than statistical discrimination can generate differential treatment. One of them is network effects. To understand how this is possible, assume that potential clients are observationally equivalent but that some suppliers share (accurate) information about clients' types. Call these suppliers insiders. Other suppliers – the outsiders – do not share information with anyone. For instance, by socializing with each other – e.g., visiting the mosque or temple or golf club together – outsiders may have opportunities to exchange information that outsiders do not have.[27]

Consider an insider supplier approached by a prospective client. The client can be an insider or an outsider. If the client is an insider, the supplier learns the client's type from other insiders. Either the client is good or bad. If the client is good, no need to screen: the supplier offers to trade immediately. If the client is bad, the client is rejected right from the start. If the client is an outsider, the supplier can either screen at cost κ or reject the client and wait until the next period. If the screening cost κ is high and there is high chance of meeting a good insider client next period, waiting is better than screening.

To show this formally, consider the supplier's decision to screen or wait. We keep much of the same notation as in the previous sub-section: B stands for outsider; W stands for insider. We assume that the proportions of good clients are the same in both, i.e., $\sigma_B = \sigma_W = \sigma$, so that there is no room for statistical discrimination. The proportion of insider clients in the economy is b. If the supplier screens

[27] Here we abstract from strategic network formation issues and regard information exchange as exogenously given.

outsiders we have:

$$V^B = \sigma(-\kappa + b\beta V^B + (1-b)\beta V^W) + (1-\sigma)(\lambda\kappa + \beta\frac{\lambda}{1-\beta}) \tag{3.7}$$

where as before λ is the supplier's profit margin and β his discount factor. The first term is what happens if the client is bad, in which case the supplier loses κ and is matched with a new client in the following period, who could either be B or W. The second term is what happens if the client is good, in which case the supplier earns his margin on the κ transaction today and gets λ thereafter. A similar equation can be written for V^W:[28]

$$V^W = \sigma(b\beta V^B + (1-b)\beta V^W) + (1-\sigma)\frac{\lambda}{1-\beta} \tag{3.8}$$

If the supplier refuses to screen outsiders, the payoffs are:

$$\bar{V}^B = b\beta\bar{V}^B + (1-b)\beta\bar{V}^W \tag{3.9}$$

$$\bar{V}^W = \sigma(b\beta\bar{V}^B + (1-b)\beta\bar{V}^W) + (1-\sigma)\frac{\lambda}{1-\beta} \tag{3.10}$$

We solve each system of equation separately and compute the difference between $V^B - \bar{V}^B$ which, for $\kappa = 1$, simplifies to:

$$V^B - \bar{V}^B = [\lambda(1-\sigma) - \sigma(1-\beta(b+(1-b)\sigma))]\,Q$$

where Q is a positive expression. The larger σ is, the less likely the supplier is to screen outsiders. Furthermore, if $\kappa = 0$ it is always optimal to screen, and $V^B - \bar{V}^B$ decreases in κ. The bottom line is that information sharing among insiders can generate discriminatory exclusion towards outsiders.[29] Information sharing by insiders hurts outsiders.

My empirical work on manufacturing firms and agricultural traders in sub-Saharan Africa shows that a significant proportion of the ethnic bias pervasive in business is due to network effects (e.g.

[28] In contrast to (3.4), the supplier does not lose κ if the client is bad and earns the full λ immediately.
[29] In Fafchamps (2003), I show that insider information sharing can also generate equilibria with discriminatory pricing.

Fafchamps 2000, Fafchamps 2003, Fafchamps 2004).

3.4. What else have we learned?

The presence of multiple types singularly complicates the operation of markets and has a number of unpleasant features.

1. The building of (rational) trust is like peeling an onion: it is a gradual discovery process in which temptation forces various 'layers' of bad clients to reveal themselves. In the end, only the good clients are left. Crooks are patient bad agent who manage to gain other people's trust in order to cheat them on a large scale. Examples include pyramid schemes (such as the ones that wrecked havoc in Albania some years ago)[30] and fraudulent banking schemes (such as the ones that plague the Nigerian banking sector today). As these examples demonstrate, regulation is often necessary to protect markets from the deleterious effects of crooks.

2. When unobservable type is correlated – even mildly – with observable characteristics, statistical discrimination naturally arises. Discriminatory exclusion is particularly rife if screening costs are high and suppliers earn low margins. This process tends to amplify the natural disadvantages that may handicap certain groups, such as native entrepreneurs, women, and microenterprises.

3. Insider networks can have effects similar to those of discrimination, leading to the exclusion of outsiders and, more generally, of less well connected firms and individuals. This shows that while information sharing serves useful purposes, as we have discussed in the previous section, it can also lead to inequitable outcomes. This is, in a sense, normal: if information sharing generates a positive externality (e.g., by economizing on screening costs and reducing the likelihood of breach) *and* it not everyone shares that information, then those who share the information have an advantage over those who do not. Social capital only helps those who have it.

4. Markets characterized by relational contracting are unfriendly for newcomers. Because trading relationships last a long time, people prefer to deal with people they already know. Consequently,

[30] Enron could also fit into this category.

newcomers are seldom offered the chance of proving themselves. This is particularly true in stagnant economies where new economic opportunities do not arise that could upset the status quo and allow significant entry. These detrimental effects are compounded by statistical discrimination and insider information sharing. The end result is a market environment that is inimical to newcomers and outsiders alike. Such an environment restricts entry and reduces competition. Add a corrupt government and an incestuous banking sector, and you get a business mentality that does not favor growth.

4. Policy Implications

We have taken a rapid tour of the market institution landscape, building a conceptual framework that can account for field observations from Africa and elsewhere. We have learned that markets do not work quite as expected, that there is a lot of inefficiency and rigidity, that entering the flea market may be easy for a newcomer but it is difficult to graduate to the upper echelons of the market economy where contracting takes place.

Are there any policy implications that come out of this new understanding? Should we simply aim to eliminate the informal institutions that exist and start with a clean slate, based on formal legal institutions? Or should we try to upgrade the information institutions that exist?

To answer these questions, we have to ask ourselves whether market institutions in developed economies are fundamentally different from what I have described here. The economic textbooks say so. But what about actual markets? Certainly there is less market inefficiency and rigidity in the large vibrant economies of developed countries than in the poor, backwater economies of Africa. There are more opportunities to switch suppliers and less flexibility – and thus more predictability – in contracts. But can we say that the features we have described are inexistent in developed economies?

Let us look at our main findings in turn. Can we reasonably claim that relational contracting is absent from developed economies? Certainly not from labor markets: the employment contract is the most common form of relational contracting anywhere. Daily labor contracts only arise when worker characteristics are irrelevant or easily observable, such as in agriculture. Consumers repeatedly eat in

the same restaurant, shop in the same supermarket, and buy the same brand of baked beans. Relational contracting is also present in sectors such as banking and insurance – whenever screening is costly or time-consuming. Relationships may be easier to break in developed economies, but the evidence suggests that they are not valueless.

What about information sharing? It is true that valuable screening information is provided in an impersonal manner by a variety of experts – from the Michelin guide to movie critics. Credit reference agencies canvas the economy and provide credit report on anyone with a credit card. Yet we go to conferences, talk to colleagues over lunch, and write reference letters for our students and former employees. This suggests that some of the same informal information sharing processes persist in developed economies, even though many of their functions have been superseded by formal institutions and paid experts.

What about crooks? Are developed economies able to completely eliminate opportunistic breach of contract and white-collar crime? Well, they may do a better job than in Africa but it would be a wild exaggeration to claim that crooks are totally absent from, say, the US corporate and economic landscape. Think of insider trading, of the savings and loans debacle, of Enron and Andersen – or of the US rise in personal bankruptcies in the midst of an economic boom. Clearly some people, anywhere, are happy to gamble with other people's money. What protects the economy from them is a complex mix of regulation and social norms.

What about discrimination? Well, there is plenty of evidence of it in developed countries, manifesting itself in many different ways. The social tensions that it generates in rich countries are no different from those that arise in poor ones. They can be inflamed for political gain or they can be attenuated by a combination of affirmative action and community development.

What about networks? Are developed economies so impersonal that who you know does not matter? Thirty years ago Granovetter (1995) brought to our attention the role that referral plays in getting a job (see also Montgomery (1991)). More recently Munshi (2003) illustrates the role of networks among Mexican migrants in the US. It is nobody's secret that in the corporate world business contacts are key to success – and that people pay a fortune for an MBA degree in part for the networking opportunity it

confers.

What this superficial overview suggests is that, after all, market institutions in developed economies are not so different from what they are in Africa. Many of the same features are present. Business ethics and informal networks matter everywhere. But many informal features have been superseded by regulation and formal institutions, such as external audits, prudential regulation for banks and insurance corporations, affirmative action laws, consumer protection laws, a free press with defamation laws, experts who can be exposed for circulating false information, etc.

Market institutions in developed economies can thus be described as a combination of informal and formal features that structure the environment in which firms and individuals operate. It would be futile and counter-productive to even attempt to eliminate informal institutions. What is needed is a way to improve and upgrade what exists. This is not a once-and-for-all process. Market institutions are not a fixed, never changing set. At the time of Adam Smith, markets in Scotland probably operated in a way very similar to Africa today.

Based on these observations, here are some ideas about the kind of reforms that are worth considering for Africa today. They are costly, so not all countries can implement them all – the environment has to be ripe for change. But hopefully they point in the right direction.

4.1. Judges and courts

Although we have de-emphasized the role of laws and courts in the enforcement of contracts, it does not mean that they play no role at all. Empirical work shows that they are important for large firms and large transactions, and that they can also serve an important role in deterring crime.

Most African countries inherited laws and judicial systems from their colonial power. This means that laws and procedures are, at least in the books, similar to those in Europe. Laws may be slightly dated, but the basic legal principles are the same as those that allowed Europe to develop.

Although what is in the books may be fine, courts are underfunded in much of sub-Saharan Africa, often lacking in basic supplies or even in access to the laws themselves Widner (2000). It would not cost much to provide African courts with the minimum required for them to do their job.

Corruption in the legal system is rampant. Perhaps the most outrageous case I have seen documented

is jails in Madagascar, where criminals customarily pay prison officials to be set free. Political interference with court activity is common in certain countries. In addition to delays due to underequipment and underfunding, African judges often have a conciliatory attitude towards debtors, granting them frequent reprieves and de facto helping them evade contractual obligations. This is, in a sense, is the translation of contractual flexibility in legal precedent. It is also easy for individuals to abscond contractual obligations by moving where they cannot be traced.

All these features combine to form a weak legal environment. But the legal and institutional foundations are there, and it is possible to invest in revamping the court system.

4.2. Formal support institutions

Perhaps more than functioning courts, what distinguishes developed market economies from undeveloped ones is the plethora of formal market support institutions. Most of them are private, such as credit reference agencies, standards and grades, quality certification (ISO), franchising, trade marks and brand names. But nearly all of them are protected or promoted in some way by legal institutions – e.g., laws on quality certification, on weights and measures, on intellectual property rights, on defamation, on the protection of privacy, etc. It would be difficult for private institutions to exist without protection from the law. For instance, franchising, branding, and trade marks are not possible if other firms can usurp the same name. Standards and grades offer little protection if no one enforces them. Expert systems find it difficult to establish their credibility if defamation laws are not implemented and consumers are not protected against fraudulent claims.

More sophisticated market institutions, like commodity exchanges and stock markets, cannot exist without external certification. For the stock market, this role is fulfilled by external auditors. For commodity markets, this is the job of bonded warehouses and of grading and quality certification agencies. The credibility of these outside experts also depends not only on a free press but also on the implementation of anti-defamation laws, so that readers can believe what they read in newspapers.[31] Regulation is essential to the credibility of many high powered financial instruments, such as futures and derivatives.

[31] Many African countries now have a free press – or at least much freer than before. There are many tabloids, all making outrageous claims about various things without any fear of being held accountable. Disinformation has replaced lack of information.

This is true in developed economies, a fortiori in developing ones.

It is possible for expert agencies (e.g., credit reference agencies, agencies that rate of credit risk, external auditors) to use their internationally recognized brand name to guarantee the credibility of their operations in developing countries. Provided brand names are somewhat protected locally, it is also possible for them to sell internationally recognized brands of goods and services through franchising or direct investment. By the same reasoning, firms in poor countries can apply to be publicly traded in another country's stock market, and can use established commodity markets elsewhere to trade in futures and derivatives. To some extent, all these developments are already happening. One could even argue that what makes multinational corporations successful is not just their knowledge base and know-how, it is also their ability to use the good market institutions in one country to support their activities in countries with less adequate institutions.

This means that, for large enough firms, inadequate market institutions in Africa are not necessarily a major obstacle to investment. But they hinder the activities of small and medium-size firms that breathe life into an economy. This may explain why we observe relatively few middle-size firms in sub-Saharan Africa (Fafchamps 1994).

4.3. Targeting and vetting

If foreign investors have access to market support institutions elsewhere while local firms do not, this gives them an advantage. By investing in a country, they may also bring know-how and business norms that were developed elsewhere. Using these superior norms of commercial behavior among themselves can give them an edge over local entrepreneurs. As a result, foreign business enclaves can develop and prosper even in the absence – or perhaps because of the absence – of formal market support institutions locally.

In such an environment, assistance to native entrepreneurs becomes an important political issue. Organizational know-how and norms of behavior must spread to domestic firms for their full productivity impact to be felt. This can only be accomplished if native entrepreneurs are allowed to become insiders themselves. This may require some form of affirmative action or targeting. Vetting may also be used at all levels of enterprise development – e.g., for women, minorities, and the like. Many development

programs can be understood in this context – e.g., micro credit for women and microenterprises, training for small entrepreneurs, etc.

4.4. Inclusive business associations

Judging from what is in place in developed economies, the number of market support institutions is potentially very large. Not all of them can be put in place overnight, and probably not all of them are needed in all countries. How can we prioritize?

This is something that each country has to sort out for itself. A government is unlikely to be able to identify priorities without talking to local business men and women, preferably through business associations. The formation of business associations should thus be promoted. For reasons that are clear from the earlier discussion, they should be required to be inclusive, that is, to foster socialization across ethnic, religious and gender lines. Failure to achieve business integration across ethnic and racial lines is, in my view, one of the most serious problems facing Africa today.

Because local entrepreneurs may not know of institutional innovations developed elsewhere, it is important to foster the insertion of local business interests in international networks and to consult foreign investors on their needs. International development agencies too can assist the upgrading of local institutions by bringing talent from elsewhere. Market institutions are an area where the transfer of knowledge is essential and can be nurtured.

Finally, one should not ignore domestic political forces. In my experience, political elites in most poor countries wish to develop their country, but not at the cost of losing their economic independence. This is plainly true everywhere, but is particular true in Africa because of its specific history. We have seen that foreign investors often are at a strong advantage relative to domestic entrepreneurs, not only because of their technological know-how, but also because of their access to market support institutions elsewhere. The solution in my view is not to shut foreign investors out – either directly, or indirectly by condoning rampant corruption – but to provide domestic entrepreneurs either with market support institutions locally, or by facilitating their access to these institutions elsewhere. For instance, it is probably not necessary for all African countries to have a stock market. But countries could open their stock market to firms from neighboring countries. The same is true for commodity exchanges. Countries

with a currency agreement, such as the CFA zone, could fairly easily institute shared market support institutions. What is needed is the political will.

References

Acemoglu, D., Johnson, S. and Robinson, J. (2005). "The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth.", *American Economic Review*, 95(3):546–79.

Acemoglu, D., Johnson, S. and Robinson, J. A. (2002). "Reversal of Fortune: Geography and Institutions in the Making of the Modern World Income Distribution.", *Quarterly Journal of Economics*, 117(4):1231–94.

Akerlof, G. A. (1985). "Discriminatory, Status-based Wages Among Tradition-Oriented, Stochastically Trading Coconut Producers.", *J. Polit. Econ.*, 93(2):265–276.

Bernstein, L. (1992). "Opting Out of the Legal System: Extralegal Contractual Relations in the Diamond Industry.", *Journal of Legal Studies*, XXI:115–157.

Bernstein, L. (1996). "Merchant Law in a Merchant Court: Rethinking the Code's Search for Immanent Business Norms.", *University of Pennsylvania Law Review*, 144(5):1765–1821.

Biggs, T., Moody, G., von Leewen, J. and White, E. (1994), Africa Can Compete! Export Opportunities and Challenges in Garments and Home Products in the U.S. Market., *Technical report*, The World Bank, Washington, D.C. RPED Discussion Paper.

Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J. W., Isaksson, A., Oduro, A., Oostendorp, R., Patillo, C., Soderbom, M., Teal, F. and Zeufack, A. (2000). "Contract Flexibility and Dispute Resolution in African Manufacturing.", *Journal of Development Studies*, 36(4):1–37.

Coate, S. and Loury, G. C. (1993). "Will Affirmative Action Policies Eliminate Negative Stereotypes?", *Amer. Econ. Rev.*, 83(5):1220–1240.

Cornell, B. and Welch, I. (1996). "Culture, Information and Screening Discrimination.", *J. Polit. Econ.*, 104(3):542–571.

Fafchamps, M. (1994). "Industrial Structure and Microenterprises in Africa.", *J. Developing Areas*, 29(1):1–30.

Fafchamps, M. (2000). "Ethnicity and Credit in African Manufacturing.", *Journal of Development Economics*, 61(1):205–235.

Fafchamps, M. (2002a), The Role of Business Networks in Market Development in Sub-Saharan Africa., *Communities and Markets in Economic Development*, Masahiko Aoki and Yujiro Hayami (eds.), Oxford University Press, Oxford.

Fafchamps, M. (2002b), Spontaneous Market Emergence., *Topics in Theoretical Economics*, Vol. 2(1), Article 2, Berkeley Electronic Press at www.bepress.com.

Fafchamps, M. (2003), Ethnicity and Networks in African Trade., *Contributions to Economic Analysis and Policy*, Vol. 2(1), Berkeley Electronic Press at www.bepress.com, p. article 14.

Fafchamps, M. (2004), *Market Institutions in Sub-Saharan Africa*, MIT Press, Cambridge, Mass.

Fafchamps, M. and Gabre-Madhin, E. (2006), Agricultural Trade in Benin and Malawi. (mimeograph).

Fafchamps, M., Gunning, J. W. and Oostendorp, R. (2000). "Inventory and Risk in African Manufacturing.", *Economic Journal*, 110(466):861–893.

Fafchamps, M. and Minten, B. (1999). "Relationships and Traders in Madagascar.", *Journal of Development Studies*, 35(6):1–35.

Fafchamps, M. and Minten, B. (2001). "Property Rights in a Flea Market Economy.", *Economic Development and Cultural Change*, 49(2):229–268.

Fafchamps, M. and Minten, B. (2002). "Returns to Social Network Capital Among Traders.", *Oxford Economic Papers*, 54:173–206.

Granovetter, M. S. (1995), *Getting a Job: A Study of Contacts and Carreers*, University of Chicago Press, Chicago. 2nd edition.

Greif, A. (1993). "Contract Enforceability and Economic Institutions in Early Trade: The Maghribi Traders' Coalition.", *Amer. Econ. Rev.*, 83(3):525–548.

Himbara, D. (1994). "The Failed Africanization of Commerce and Industry in Kenya.", *World Development*, 22(3):469–482.

Johnson, S., McMillan, J. and Woodruff, C. (2000). "Entrepreneurs and the Ordering of Institutional Reform: Poland, Slovakia, Romania, Russia and Ukraine Compared.", *Economics of Transition*, 8(1):1–36.

Johnson, S., McMillan, J. and Woodruff, C. (2002). "Courts and Relational Contracts.", *Journal of Law, Economics, and Organization*, 18(1):221–77.

Kandori, M. (1992). "Social Norms and Community Enforcement.", *Review of Economic Studies*, 59:63–80.

Keefer, P. and Knack, S. (1997). "Why Don't Poor Countries Catch Up? A Cross-National Test of Institutional Explanation.", *Economic Enquiry*, 35(3):590–602.

Kranton, R. E. (1996). "Reciprocal Exchange: A Self-Sustaining System.", *Amer. Econ. Rev.*, 86(4):830–851.

Levitt, S. D. (2006), *An Economist Sells Bagels: A Case Study in Profit Maximization*, Vol. 12152, NBER Working Papers.

McMillan, J. and Naughton, B. (1996), *Reforming Asian Socialism: The Growth of Market Institutions*, University of Michigan Press, Ann Arbor.

McMillan, J. and Woodruff, C. (1999a). "Dispute Prevention Without Courts in Vietnam.", *Journal of Law, Economics, and Organization*, 15(3):637–58.

McMillan, J. and Woodruff, C. (1999b). "Interfirm Relationships and Informal Credit in Vietnam.", *Quarterly Journal of Economics*, 114(4):1285–1320.

McMillan, J. and Woodruff, C. (2000). "Private Order Under Dysfunctional Public Order.", *Michigan Law Review*, 98(8):2421–58.

Milgrom, P. R., North, D. C. and Weingast, B. (1991). "The Role of Institutions in the Revival of Trade: The Law Merchant, Private Judges, and the Champagne Fairs.", *Economics and Politics*, 2(19):1–23.

Montgomery, J. D. (1991). "Social Networks and Labor-Market Outcomes: Toward an Economic Analysis.", *Amer. Econ. Rev.*, 81(5):1408–1418.

Munshi, K. (2003). "Networks in the Modern Economy: Mexican Migrants in the US Labor Market.", *Quarterly Journal of Economics*, 118(2):549–99.

North, D. C. (1973), *The Rise of the Western World*, Cambridge U.P., Cambridge.

Platteau, J.-P. (1994a). "Behind the Market Stage Where Real Societies Exist: Part I - The Role of Public and Private Order Institutions.", *J. Development Studies*, 30(3):533–577.

Platteau, J.-P. (1994b). "Behind the Market Stage Where Real Societies Exist: Part II - The Role of Moral Norms.", *J. Development Studies*, 30(4):753–815.

Shapiro, C. and Stiglitz, J. E. (1984). "Equilibrium Unemployment as a Worker Discipline Device.", *Amer. Econ. Rev.*, 74(3):433–444.

Staal, S., Delgado, C. and Nicholson, C. (1997). "Smallholder Dairying Under Transactions Costs in East Africa.", *World Development*, 25(5):779–794.

Stiglitz, J. E. and Weiss, A. (1981). "Credit Rationing in Markets With Imperfect Information.", *Amer. Econ. Rev.*, 71(3):393–410.

The World Bank (2002), *World Bank Development Report 2002: Building Institutions for Markets*, Washington DC.

Watson, J. (1999). "Starting Small and Renegotiation.", *Journal of Economic Theory*, 85(1):52–90.

Widner, J. (2000), *Building the Rule of Law*, W.W. Norton, New York.