

6-2003

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Recommended Citation

Kevane, Michael and Conning, Jonathan H., Why Isn't There More Financial Intermediation in Developing Countries? (June 2003). Available at SSRN: <http://ssrn.com/abstract=1115508> or <http://dx.doi.org/10.2139/ssrn.1115508>

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United Nations
University

WIDER

World Institute for Development Economics Research

Discussion Paper No. 2002/28

Why isn't there more Financial Intermediation in Developing Countries?

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June 2003

Abstract

This paper proposes to organize thinking about the opportunities for improving and extending financial markets and safety nets for the poor, by focusing on factors that may explain why the linkage of local financial networks and safety nets with the larger economy often fails or is incomplete. Understanding the nature of these impediments is the first step in proposing policies to help promote more effective linkage and intermediation. We propose four explanations for the slowness of adoption of intermediation (high costs of delegated monitoring aggravated by limited intermediary capital; lock-in and crowding out effects from local insurance arrangements, social norms against cooperation with intermediaries; and political resistance to new institutions that shift the balance of power in local polities). Of course, financial repression and weak legal systems remains important as cause of lack of intermediation. We conclude with a review of public policy for more effective intermediation.

Keywords: financial intermediation, mutual insurance, safety nets, microfinance, microcredit

JEL classification: O16, Q14, G2, N20

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This study has been prepared within the UNU/WIDER project on Insurance Against Poverty, which is directed by Dr Stefan Dercon.

UNU/WIDER gratefully acknowledges the financial contribution to the project by the Ministry for Foreign Affairs of Finland.

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1 Introduction

Households in developing countries participate in labour and product markets that insert them directly into national and global markets, yet they often remain relatively cut-off from the opportunities for investing, risk-taking and risk-spreading that are potentially available in a large integrated national or global financial market. Because financial institutions are weak, and safety nets are often missing, people remain highly vulnerable to negative income shocks and other adverse events. Poor people are then forced to cancel or forego higher return activities that might have made better use of their talents and resources.

Development economists have spent much effort in recent years trying to measure the extent to which households appear to be insured against idiosyncratic shocks and the structure and performance of local financial contracts such as bilateral credit and insurance arrangements with landlords, moneylenders, family or friends, or group-based mutual savings and insurance arrangements such as ROSCAs. While these studies have advanced our understanding of local *bilateral* financial contracting and mutual insurance within poor communities, the study of financial *intermediation* in developing countries has remained relatively neglected. Financial intermediaries expand and transform the set of trades that can take place both within communities and across communities by carrying out monitoring and control activities and providing asset transformation services at lower cost than what could be achieved under a system of local bilateral contracts or mutual insurance arrangements (Diamond 1996).

This chapter proposes to organize thinking about the opportunities for improving financial markets and safety nets for the poor. We are specifically interested in the question of what impedes more effective intermediation to link local financial networks and safety nets with the larger economy. Understanding impediments is the first step in proposing policies designed to promote more effective linkage. The rationale for policy is to have more comprehensive risk intermediation provided at lower cost to more of the poor. Public policy has both efficiency and redistributive rationales. In the longer run, a better supply of financial intermediation services will enable the poor to protect the value of consumption streams and to allocate their talents and resources to more productive, but risky or long term, activities.

What retards the natural extension of national or urban financial institutions into poor rural and slum areas? Three important preliminary observations must be made. First, a large literature has made clear that financial repression resulting from interest rate caps, directed credit, and excessive regulation and state involvement in banking, has been a principal culprit of the relative lack of more effective intermediation in developing countries (Adams, Graham et al. 1984; McKinnon 1973). In this view, a movement away

from bad policies is a far more important step than any pressing need for policy innovation. Nelson (1999) summarizes the two principal liberalizing reforms that, in this view, would lead to more effective financial intermediation for the poor:

establishing permissive banking acts legalizing deposit-taking ‘near-banks’ but subjecting them to less onerous (and more participatory) regulatory, prudential, reporting and other requirements than major banks, and reforming usury laws on the basis of consumer information laws rather than quantitative interest rate caps.

A related theme in this literature is that the widespread history of government failure and political capture suggests that proposals that involve regulation or intervention in markets should meet stringent tests of imperviousness to interest group manipulation.

Second, the relative absence of intermediaries may be a simple function of the low levels income and wealth in developing countries. Some authors argue that growth and financial deepening go hand in hand: as the economy grows there are more opportunities for diversification, and this in turn induces agents to invest in riskier but higher return projects, so the economy grows faster (Acemoglu and Zilibotti 1997). Intermediation, in this view, is a correlate of growth, and thus is influenced by the same institutional environment that promotes or retards growth. In a pessimistic form, this amounts to an extreme version of the induced institutional innovation hypothesis: there is little point discussing institutions, because the institutions that exist are always the ones appropriate for existing technologies and prices. Influential work by Levine and co-authors (Demirgüç-Kunt and Levine 2001; Levine 2001; Levine, Loayza et al. 2000) however, seems to have firmly established the causal importance of financial development for subsequent economic growth.

Finally, the dispersed nature of settlements in many developing countries is another obvious culprit. But low population density seems not to be a sufficient condition. Intermediation was weak and lacking in Bangladesh, a very high-density country, before the recent explosive growth of Grameen Bank and other microfinance institutions. Clearly, there have been very important changes in the technologies of intermediation that have facilitated financial market expansion even in low-density areas. Low population densities have also not hindered the very rapid expansion of microcredit in Africa, where loan officers on average extend more loans than their Asian counterparts (Lapenu and Zeller 2001).

These observations suggest that the question for this paper is the following: Holding bad policy, population density, and general growth determinants constant, are there other proximate factors constraining intermediation that integrates local financial markets and safety nets with urban and national financial institutions, and is there room for innovation in public policy to overcome these? Our goal then is to investigate the factors that make intermediation expensive, focusing on factors different from, or additional to, those typically used to explain what makes local bilateral contracts expensive. We then explore whether public policy might play a role in reducing the costs of intermediation, with the caveat that proposals for public policy must pass the test of ‘surviving’ government failure.

We proceed as follows. Section 2 outlines what kinds of intermediaries we have in mind, and what kinds of costs and benefits they expect from transactions. Section 3 presents some evidence regarding the relative absence of these institutions in many economies. Section 4 offers a simple insurance model summarizing how information asymmetries and costly enforcement constrain contracting in agency relationships where side-contracting is possible. Section 5 then briefly summarizes recent theories of lock-in and models that incorporate more of the social and political realities of village and slum life. All of these theories place trust and informational closeness at the centre of the problem of intermediation. Section 6 discusses policy and innovation. Section 7 concludes.

2 Intermediaries

Our focus in this chapter is on innovation in regional and national intermediation. Intermediation implies an intermediary. We are concerned with the person who ‘delivers’ financial contracts across a geographic space to a locality, acting as the agent of a large-scale regional or national institution, and the incentives they face. At some points, when we speak of an intermediary, we will usually mean the actual person, rather than the institution itself. The ‘intermediary’, then, is shorthand for ‘the agent of the institution that intermediates.’

The intermediary will usually have at least two ‘constituencies’ caring about his or her behaviour. On one side will be locals who enter into contracts with the institution through the intermediary. On the other side is the institution itself, in whose name the intermediary acts as a delegate. The last few decades have witnessed an explosion of research on how contracts between an intermediary and his village clients should be structured and, somewhat less frequently, on the contractual relationship between the intermediary and the institution. This literature covers both financial markets and safety nets, but shares a common emphasis in modeling the contingent nature of actions that must be taken, or claims that must be settled, and consequent problem of verifying contingent states on the part of the many parties to a transaction.

Table 1 exemplifies the kinds of problems an intermediary might expect in carrying out different financial services. Consider first the relatively simple transaction of transferring money to a specified individual. Western Union and other cash transfer services provide a good example of private sector intermediation that is ubiquitous in much of the developing world today. While the intermediation services that they provide link individuals across vast distances, the transacting problem they solve is relatively simple. The intermediary is mainly charged with maintaining proper accounts and with verifying the identity of the recipient of funds, rather than with verifying the applicability of contingent claims. There are clear, verifiable steps that help Western Union monitor the agents within its own network. The public, in turn, has come to trust Western Union in part because of the substantial investments it has made in local offices and publicity. These investments signal that Western Union intends to maintain a long-term presence, and therefore that Western Union is less likely to abscond with their money. The public is

also generally aware that Western Union has an elaborate system for tracing and monitoring its offices and agents.

Second, consider the activities of 'pure' savings institutions. Postal savings banks, for example, are common financial intermediaries, often with branches throughout very poor countries. They provide the service of trustworthy holding of savings. The main issue is to convince depositors that their investments will be safe, and earn a sufficient rate of return. (Japan's ubiquitous postal savings institution has been criticized for advertising 'too much' the safety of deposits, leading, perhaps, to disintermediation from the broader banking system.) Informal intermediaries also exist, usually in the form of professional 'organizers' of ROSCAs. There are agency issues (intermediary or intermediary institution absconding with the money), and even the comparatively safe savings institution may be vulnerable to runs if financial management is imprudent (as in the savings and loans crisis in the United States). The intermediary does little state verification, and is again concerned more with accounting and identity verification.

Third, consider the pawnshop. Pawning is a combination of lending and insurance with collateral (Skully 1994), and pawnshops may sometimes be important sources of finance (in China, or early 19th century United States for example). In many of the poorest villages of the world informal pawnshops operate to basically guarantee a market, i.e. liquidity, for non-standard commodities (at discounted prices). Household possessions can then become, like livestock, part of a household's buffer stock strategy. The pawnshop intermediates non-standard goods between the village and broader markets. The information problem now extends past identity verification, into assessments of both the origins of the pawned goods (are they stolen?) and valuation of the goods themselves.

Fourth, consider lending and insurance. These are transactions that are much more vulnerable to agency problems, as they are dependent on private information on actions and outcomes and contingencies. We are lumping lending and insurance together because both are state-contingent financial transactions, as loans are almost everywhere subject to possible default renegotiation. Intermediary agents in these transactions play a more complicated role than do intermediaries in the earlier examples. Borrowers and claimants may have incentives to dissimulate their actions and outcomes. For that reason, intermediaries must screen applicants, monitor the actions of insurees and borrowers, verify outcomes, and transmit information and resources collected to the larger organization for which they work. The financial institution employing these intermediaries must not only design contracts to limit strategic behaviours on the part of borrowers and insurees, but must also provide incentives to the loan officers and insurance salespeople they hire to monitor and not collude with clients, in order to protect the value of investments made by savings depositors or outside creditors.

Fifth, consider national or regional safety nets. Very often urban-based social workers will determine whether particular persons meet welfare criteria. Why are these decisions not decentralized to cheaper, local, agents? We have discussed this question at length elsewhere (see Conning and Kevane 2002). Because safety nets are funded through taxation (rather than through contributions) it is the government's money, and because the poor and vulnerable are in this case *recipients* rather than *reciprocators*, it is not clear

that intermediaries have incentives to deliver the subsidy to those most in need, the way an intermediary delivers loans to those most able to repay. Redistributive programmes then involve paradoxes of targeting and possible programme capture (Gelbach and Pritchett 1997; Sen 1995).

The discussion above suggests that intermediation of financial contracts and safety nets is impaired because of problems on the supply side of the market. Private sector intermediary institutions have not stepped in to take advantage of seemingly large arbitrage opportunities. State and local governments, and national non-governmental organizations, have eschewed local intermediaries for targeting available resources for public safety nets and poverty alleviation.

3 The relative absence of intermediation

There is ample evidence to suggest that financial systems and local safety nets are not as integrated into the larger financial system as they could be. Many of the intermediary institutions described above have never been observed in villages and rural areas around the world. For example, despite the apparent simplicity of the transactions, Western Union had no presence in sub-Saharan Africa until 1993, when two expatriate Ghanaian financial entrepreneurs convinced the conglomerate to commence operations in Ghana. In the following eight years, Western Union expanded throughout the continent into 47 countries, transferring roughly one billion dollars per year. In South Africa alone Western Union processed 3.2 million transactions in 1999, but it was not until 2001 that the company opened a regional office.

Government legislation to regulate and permit microfinance is a major obstacle. South Africa, the most developed financial center on the continent, only established implementing legislation for microfinance in 1999 (Meagher and Wilkinson 2001). In African countries, even trade credit among manufacturing firms is relatively limited, and credit bureaus are largely absent (Fafchamps 1997; 2000). Government regulations are also hindering the establishment of credit bureaus for microfinance in Latin America (Development Alternatives Inc. 2002). Few microfinance institutions use scoring methods or reputation histories to determine loans or loan conditions (see Schreiner (2002) and the chapter by Sadoulet in this book).

The recent expansion of microfinance institutions throughout the world suggests that supply-side innovations are important. West Africa, for example, has seen an explosion of interest in microfinance in the past decade. Most villages were completely cut-off from even these modest micro-loans prior to this credit boom (MkNelly and Kevane 2001). Many microcredit institutions now have almost a decade of sustained, and close to

sustainable, intermediation. Clients continue to borrow even though it is now apparent that the financial services are the only 'benefit' from participation.¹

The expansion of South Africa's pension system to black citizens is also telling (Case and Deaton 1998). Clearly, here was a case of widespread demand for pensions, and a politically-motivated constraint on supply. The electorate is overwhelmingly in favour of a state-sponsored pension system for the aged. It is more than likely that other African countries have similar voter equilibria where national-level pensions would be demanded. Moreover, existing pension and social safety nets seem to suffer from serious problems of intermediation, in the sense that agents responsible for distribution to individuals in localities do very poor jobs of targeting.

For the informal sector, there is mixed evidence on the relative size and functioning of informal local and regional intermediation for credit and insurance. Self-sustaining credit and insurance networks offer partial insurance because of problems of information or limited commitment, even within the close quarters and repeated interaction of village life (Coate and Ravallion 1993; Fafchamps 1996; Kimball 1988; Ligon, Thomas et al. 1999). The weight of evidence suggests that informal insurance mechanisms are seriously incomplete (Morduch 1995; Townsend 1994). More recent research rejects even the hypothesis of complete sharing of risks within households (Dercon and Krishnan 2000; Goldstein 2000). As for regional networks, Grimard (1997) presents evidence suggesting that ethnic groups occupying large spaces in Cote d'Ivoire do practice limited consumption pooling. Udry (1994), on the other hand, finds that local state-contingent contracts common in northern Nigeria do not extend to inter-village financial arrangements.

4 Lack of intermediation arising from agency problems

In all of the examples of Table 1 there are numerous layers of contracting that a financial institution or policymaker must take into account when assessing intermediation possibilities. First, the intermediary institution must motivate and solve asymmetric information problems with its own employees, and its own depositors or creditors. Second, the intermediary institution must find contractual forms that ensure profitability when lending to or insuring clients, or that achieve the desired targeting, in the case of a safety net. Third, the intermediary institution must anticipate and may possibly want to regulate or harness the existing or new local side-contracting arrangements that agents and clients' might strike up amongst themselves, or with other persons or competing institutions.

¹ Many villagers may have joined microfinance schemes expecting to receive non-pecuniary benefits, or even village public goods such as schools or dispensaries. Most microfinance institutions, however, do not provide public goods; nor do they necessarily do a good job of 'empowering' women through collective mobilization.

Understanding the nature and potential impacts of such side-contracting activities lies at the heart of any theory of financial intermediation because side-contracting with a third party typically changes the incentives faced by the parties to a bilateral contract. The inability to rule out or properly regulate some sorts of side-contracts with third parties may be deleterious to one or both parties to a contract, and therefore may ‘crowd-out’ certain types of beneficial transactions. In other cases, side-contracts amongst locals, or with other financial intermediaries may well be beneficial to an outside institution transacting with locals; side-contracts may actually serve to ‘crowd-in’ local or outside resources and build more complex intermediary structures that permit transactions that would not have taken place.

The design of structures to promote financial intermediation involves deciding which side-contracts to allow or to internalize within the institution, and which to exclude or try to regulate. The impact of potential side-contracting and collusion has been discussed in the theoretical literature, for example in the context of risk-sharing and moral hazard models of Itoh (1993), Holmstrom and Milgrom (1990), Arnott and Stiglitz (1991) and Prescott and Townsend (2002), in the group loan model of Stiglitz (1990), as well as in the industrial organization literature (Laffont and Tirole 1993). Our purpose below is to synthesize and illustrate several key results with a simple model, emphasizing policy relevant lessons for developing countries.

We begin with a standard analysis of insurance in the presence of moral hazard and then progressively complicate the model by allowing for different types of side-contracts amongst agents. Comparing these alternative scenarios clarifies when local contracting crowds out, or crowds in, new outside financial services. The model also offers insights into the use of delegated monitoring and emergence of financial intermediation, and effects that monitoring costs, transaction costs, and village power dynamics can have on the shape and welfare consequences of financial contracting.

We use the word ‘villager’ or ‘agent’ to describe the clients, and financial institution (FI) to describe the outside provider of financial services, recognizing that the kind of clients we are discussing are also rural dwellers who live from non-farm incomes, or slum dwellers in cities, and that many of our examples concern insurance, rather than loans.

Elements of a Model

Think of a very simple economic setting where there are only two villagers or agents. Each villager has access to a single risky production project and the two projects are stochastically independent. The outcome on each project is affected by each agent’s effort. If the agent is diligent he incurs disutility of effort D and his project succeeds to yield an outcome X_s with probability p_s or fails with probability $p_f = (1 - p_s)$ to yield outcome $X_f < X_s$. An agent who does not apply effort avoids effort disutility D , but this lowers the probability of success from p_s to $q_s < p_s$. In what follows it will be useful to also define the joint or total project outcome $X_{ij} = X_i^1 + X_j^2$ where $i \in \{s, f\}$ and $j \in \{s, f\}$ together index the four possible joint outcomes or states of the world.

Since villagers are risk-averse there are obvious gains to state-contingent contracting within the village, and between villagers and a risk-neutral outside financial institution (FI). A first-best efficient allocation would have villagers purchasing full insurance from the FI to obtain smooth consumption. Such arrangements will however not in general be feasible if the FI cannot specify villager 1's effort in a contract. Table 2 portrays six possible alternative contract structures that might become feasible depending on whether local agents can observe and 'monitor' each other's actions to limit moral hazard in local contracts, and whether or not an outside FI can enforce exclusive contract by limiting side-contracts amongst agents. The possible contractual structures are: (1.a) an imperfect local mutual insurance equilibrium where because of moral hazard risk-sharing even amongst local agents is imperfect and there is no feasible trade with an outside FI; (1.b) a locally efficient mutual insurance equilibrium where local monitoring allows villagers to get around moral hazard and achieve efficient risk-sharing in local trades but risk-sharing remains incomplete due to an inability to trade with an outside FI; (2.a and 2.b) equilibria with exclusive bilateral contracts between an outside FI and each of the villagers where insurance is imperfect due to moral hazard; (3.a) 'crowding-out' equilibria where side-contracting between villagers disrupts insurance that might have otherwise been provided by an outside FI (in the case of complete crowding out this case collapses to 1.a); and (3.b) equilibria where an outside FI utilizes local agents or village structures as delegated monitors or intermediaries to provide financial services that otherwise would have been infeasible.

This last set of equilibrium structures is the most interesting as they illustrate how 'closeness' amongst locals might be harnessed to leverage or 'crowd-in' outside financial resources that might otherwise not have been forthcoming. We explore this case in detail below and in the discussion of costly delegated monitoring. Our aim is to clarify the conditions under which each of these different contractual structures is likely to emerge and to compare the volume of trade and welfare in each case.

There are four possible joint project outcomes, or states in this simple village economy. The state-contingent consumption bundle for villager $k \in \{1, 2\}$ is given by c_{ij}^k or $\{c_{ff}^k, c_{sf}^k, c_{fs}^k, c_{ss}^k\}$. To simplify the analysis further, assume agent 2 always chooses to exert effort but agent 1's effort level cannot be verified by an outside financial institution and may therefore be subject to moral hazard. Below we will examine scenarios where agent 2 can and cannot observe agent 1's action.

In what follows we follow the convention of the literature and focus on the financial institution's 'implementation problem.' That is, we look for the set of contracts that implements diligence or effort by the first agent at lowest cost to the principal (in this case the FI) while providing insurance to the villager(s). How the resulting surplus is actually divided between the FI and the agents is not that important. We could just as well be looking at contracts in a market where competition in insurance and lending means the FI can only break even and leaves all realized gains to trade with the villagers, or any situation in between. Our goal here is to offer the reader a more policy relevant synthesis of the general type of results established by Itoh (1993), Holmstrom and Milgrom(1990), and Arnott and Stiglitz (1991).

Case 1: Isolated local mutual insurance

When villagers can monitor each other's efforts (case 1.b) they can enter into locally efficient mutual insurance or consumption pooling arrangements. This equilibrium is locally efficient in the sense that the marginal rate of substitution between any two states will be equalized across agents (i.e. $u_{ij}^2 = \lambda u_{ij}^1$ for every state ij , where λ is a constant) but is not first-best efficient because it fails to take advantage of the gains to trading with a risk-neutral outside FI who could provide full insurance against village-wide shocks.

When villagers cannot monitor efforts (case 1.a), moral hazard will stand in the way of efficient local mutual insurance. The need to provide agent 1 with incentives will result in more variable consumption patterns and lower welfare. Since moral hazard applies only to agent 1, this is analyzed as a classic moral-hazard problem with a risk-averse principal (Holmstrom 1979).

Case 2: Exclusive bilateral contracts

Assume now that the FI can contract separately with each villager using an *exclusive* contract that prohibits any type of side-contract amongst agents. The FI seeks to provide insurance/loans to the agents at minimum expected payout $c_{ij}^1 + c_{ij}^2$. If F is the cost of funds and transaction, then the FI chooses $\{c_{ij}^1, c_{ij}^2\}$ to induce both agents to participate and provide villager 1 with incentives to be diligent:

$$\min_{c_{ij}^1, c_{ij}^2} \sum_i \sum_j p_i p_j (c_{ij}^1 + c_{ij}^2) + F \quad (1)$$

subject to

$$\sum_i \sum_j p_i p_j u(c_{ij}^1) - D \geq \sum_i \sum_j q_i p_j u(c_{ij}^1) \quad (2)$$

$$\sum_i \sum_j p_i p_j u(c_{ij}^k) - D \geq \bar{U} \quad (3)$$

As project returns are independent of one another and agents cannot observe each other's actions, no relative-performance evaluation considerations apply and the optimal contract offered to each agent will be an individual contract in the sense that each agent's payment is not made contingent on the outcomes of the other agent's project (Holmstrom 1979; Mookherjee 1984). An optimal contract will therefore have $c_{ss}^k = c_{sf}^k = c_s^k$ and $c_{fs}^k = c_{ff}^k = c_f^k$ for $k=1,2$, since any other feasible contract with the same expected consumption value imposes more risk on the agent. Since villager 2's actions are by assumption verifiable, the FI can provide full insurance and the agent obtains the same fixed consumption level in each state. Agent 1 on the other hand must be given

incentives to exert effort. Letting $\Delta = p_s - q_s$, the incentive compatibility constraint for agent 1 can be expanded and rewritten as:

$$u(c_s^1) - u(c_f^2) \geq \frac{D}{\Delta} \quad (4)$$

This states that an optimal contract must give the agent higher expected utility following project success compared to failure in order for the agent to have incentive to want to raise the probability of success by exerting higher effort. Since for this reason villager 1 must bear risk, the expected cost of providing a contract that keeps villager 1 at his reservation expected utility rises. The feasibility of contracts between the FI and the villager depends therefore on the cost of diligence D (which in turn may depend on monitoring by the FI or its delegates, as discussed below), how diligence raises the probability of success (captured by Δ), the villagers' degree of risk aversion, and the FI's fixed costs F .

Case 3a: Side-contracts and crowding-out

The exclusive bilateral contract just examined is the solution to a standard moral hazard problem.² This solution rests on the assumption that the FI can costlessly prohibit all side-contracts. Given a large empirical and anthropological literature describing a prevalence of local risk-sharing arrangements this assumption may not be very realistic. Even where local risk sharing arrangements might not have been extensive prior to the arrival of outside forms of finance, it seems probable that enterprising locals would search for ways to exploit newly created opportunities for financial arbitrage via side-contracts. For example, a borrower who obtains outside insurance or loans might on-lend some of those funds to others, or might call on others for help in the event that he cannot meet a required payment.

Do such side-contracts help or hinder villagers' access to outside financial services? This question has been studied in some depth in the theoretical literature (Arnott and Stiglitz 1991; Holmstrom and Milgrom 1990; Itoh 1993; Varian 1990), but has not frequently been translated into policy relevant lessons. A conclusion that runs throughout these studies is that if agents can side-contract only on the same observable contingencies that an outside financial institution can contract on – in other words, if agents do not possess informational 'closeness' relative to the outsider -- then such side-deals can never improve, and may quite possibly harm, villagers' access to financial services. On the other hand, side-contracts can help 'crowd-in' new or additional financial services if an outside FI can design a contract to harness local agent's 'closeness' or ability to side-

² As villager 1's participation constraint and incentive constraint must both bind at an optimum, the optimal contract is easily shown to be $u(c_f^1) = (\bar{U} + D) - pD/\Delta$ and $u(c_s^1) = (\bar{U} + D) + (1-p)D/\Delta$.

contract on actions or outcomes that the FI would not be in a position to observe or verify via bilateral contracting. We argue that ‘crowding in’ of this sort is at the heart of what financial intermediation is all about.

Consider first the crowding-out scenario. The two agents can now side-contract for the purpose of further mutual insurance but contracts can only be made contingent on the same publicly observable outcomes that the FI relies upon in its own contracts with villagers. Recall that, by design, the optimal individual contracts offered by the financial institution in case 1 above provided full insurance to agent 2 but left agent 1 imperfectly insured in order to provide incentives. This now leaves open the possibility that agents might find it profitable to agree to a mutual insurance side-contract to smooth out agent 1’s consumption. Such side-contracting may however disrupt agent 1’s incentive to remain diligent and hence might harm the value of the contracts the FI has with agent 1.

If the FI cannot physically or legally forbid such side-contracts, it should at least anticipate its consequences in the design of its own contracts. As the FI can always reproduce whatever side contract arrangements the agents have in mind, without loss of generality we can restrict attention to contracts that by design provide incentives against further side-contracts or coalition-formation. Following (Itoh 1993) we refer to such contracts as *coalition-proof*. For a contract between the FI and local agents to be coalition-proof requires that the contracts meet an additional set of constraints compared to the case where side-contracts could be costlessly prohibited. This can only reduce the feasible contract set, leading to the possibility of crowding-out.

To illustrate, consider the simple case of a village that organizes a mutual aid programme to meet basic needs, regardless of past actions. The village safety net prevents agents’ consumption from ever falling below some feasible minimum threshold. Incentives for an agent to be diligent in a contract with an outside FI will then obviously be dulled if the local safety net provides too much insurance in the event of failures on the financed activity. Contracts with an outside financial intermediary may become difficult or impossible to implement.

This suggests why pre-existing local mutual insurance arrangements might delay the entry of new forms of outside finance, or conversely, why new outside intermediaries might crowd-out pre-existing local insurance arrangements. A significant social science literature has decried the break-down of such local risk-sharing arrangements in the face of market penetration (Scott 1976), and recent empirical literature has established crowding-out in some cases. In chapter 13 of this book, Albarran and Attanasio analyze evidence suggesting that Mexico’s PROGRESA social safety net programme crowded out local private insurance transfers. Morduch (1999) surveys similar findings. Despite these claims, our view is there is not yet enough evidence to decide on how important and pervasive this concern is in practice. It cannot always be presumed that effective local insurance ‘existed’ prior to intermediation; many NGOs spend considerable effort and resources promoting local mutual insurance, rather than encouraging intermediation. Furthermore, the development of markets has been changing households outside opportunities anyway, leaving some households vulnerable as local sharing networks and institutions have been modified or displaced. To not offer social safety nets, or to not

encourage outside private intermediation in such contexts for fear of disrupting local insurance networks runs the risk of romanticizing institutions that may already be weak and risks leaving vulnerable households behind.

More fundamentally, the ability of locals to side-contract can at times be turned into an asset for potentially “crowding-in” rather than “crowding out” new financial services. Financial innovation is about finding ways to harness local information and enforcement mechanisms to help leverage outside resources and expand the range of feasible contracting. To understand these issues we turn next to a variation on the model that can produce “crowding-in,” followed by a discussion of the concept of delegated monitoring.

Case 3b: Crowding-in by harnessing local information.

Suppose the situation is as in the last section except that now agent 2 can enter into action-contingent side-contracts with agent 1 while the financial institution remains unable to observe or directly contract on agent 1’s actions. Can the outside financial institution harness this extra ‘closeness’ between agents, to enable greater access to financial services?

There are two cases to consider, the first where agents can transfer utility directly amongst themselves, and the second where they can only contract for state-contingent payments of goods. In the transferable utility case³, the FI wishes to minimize the expected cost of implementing diligence (1) subject to

$$\sum_i \sum_j p_{ij} (u(c_{ij}^1) + u(c_{ij}^2)) - 2D \geq \sum_i \sum_j q_{ij} (u(c_{ij}^1) + u(c_{ij}^2)) - D \quad (5)$$

$$\sum_i \sum_j p_i p_j (u(c_{ij}^1) + u(c_{ij}^2)) - 2D \geq 2\bar{U} \quad (6)$$

$$u'(c_{ij}^1) = u'(c_{ij}^2) \quad \text{for all } i, j \quad (7)$$

The incentive compatibility constraint (5) and participation constraint (6) reflect the fact that the agents, acting as a coalition, act to maximize the utility achieved by the group, which they will then redistribute according to some efficient side-contracting mechanism internal to the village. The FI cannot legally or physically forbid such side-contracts but it can and will take them into consideration when designing the optimal contract. Since the FI can always reproduce any outcome-contingent side-contract the agents might have chosen, without loss of generality, we can restrict attention to contracts that provide incentive against further side contracts or coalition-formation (Tirole 1992). The coalition-proof constraints (7) capture the fact that agents will always want local mutual insurance within the coalition, and therefore (in the transferable utility case) the marginal utility of consumption in each state must be the same for the two agents.

³ Equivalent to assuming agents have quasi-linear utility functions.

The FI can take advantage of agents' ability to side-contract on actions to provide better risk-sharing services without disrupting agent 1's incentives to be diligent. The reason is that the individual-level incentive compatibility constraint (4) can now be replaced by a coalition-level incentive compatibility constraint (5) that is easier to satisfy. Intuitively, the FI can now provide more consumption smoothing to agent 1 without disrupting incentives because agent 2's 'monitoring' keeps agent 1 diligent even in circumstances where the individual IC constraint (4) would not be satisfied.

Agent 2 has in effect been hired to be the FI's delegated monitor. To have incentives to 'monitor' agent 2 must however suffer some consequences for agent 1's project failures. This raises the cost of contracting with agent 2 by lowering the risk premium the FI can extract compared to the earlier bilateral contract case. In the transferable utility case this is always worthwhile because agent 2's 'monitoring' increases the risk premium the FI can now extract from agent 1. Itoh's (1993) remarkable paper proves these results more formally; demonstrating also that agent side-contracting on actions can also be of advantage to the principal in the non-transferable utility case.⁴

Costly delegated monitoring and the role of intermediary capital

The assumption that agents can costlessly observe and side-contract on both outcomes and actions is widely employed in the theoretical literature. Stiglitz (1990) for example assumes costless side-contracting to model group loans and peer-monitoring, showing that a joint-liability loan works to harness the assumed closeness amongst borrowers. The assumption is not very realistic however. It means that villagers can perfectly 'collude' or 'cooperate' without cost to coordinate actions, as if the village were a single syndicate or collective household (Chiappori 1988). Taken literally this implies that efficient local risk sharing should always hold within the village. But efficient risk sharing is often rejected empirically even within households (Udry 1996). A collective village seems even less plausible. A more realistic assumption is that locally informed agents may have an advantage compared to outsiders in carrying out *costly* and imperfect monitoring and control activities. Understanding how monitoring and delegation costs vary with different intermediary structures is essential to appreciating the possibilities and limits of financial innovation in developing countries.

Some villagers will naturally be in a better position than others to act as delegates in costly monitoring and control activities. A delegated monitor, as the last section made clear, needs to bear risk to have incentives to monitor, so less risk averse and/or better-capitalized agents make better delegated monitors. This might suggest why local shopkeepers, landlords and employers so often fill this role.

⁴ In the non-transferable utility case, coalition-proof constraints (7) are replaced by the more general condition that marginal rates of substitution be equalized across agents, and the coalitional incentive compatibility constraint (5) are modified to remain consistent with each agent getting their agreement utility levels. See Itoh (1993) for full details.

Since a less risk-averse agent 2 makes for a better monitor let us for simplicity now assume that agent 2 is risk-neutral. In addition agent 2 no longer engages in risky production and her earnings are now determined simply by the terms of her contract as a delegated monitor. In contrast to the last section, we now assume the contract is designed for the benefit of agent 1, as it would be in a competitive financial market. The practical implication of this is that the delegated monitor and the outside FI are now kept at their participation constraints while we aim to maximize agent 1's expected consumption.

To capture the idea that monitoring is a costly and imperfect activity, we adapt a simple specification borrowed from the financial contracting literature.⁵ A local delegated monitor can, at monitoring cost m reduce the private benefit that an insured farmer stands to gain from non-diligence from D to $d < D$. Think of m as the labour effort the monitor must expend in frequent visits, inspections, and social work and d as the lower net private benefit that agent 1 gets from being non-diligent when he is monitored and pressured⁶ in this way. An outside FI might also try to monitor the insured farmer with their own non-local staff only at a higher cost $M > m$, which in general makes it prohibitive.

The contract design problem can now be stated as:

$$\max_{c_i^1, c_i^2} Eu(c_i^1 | p) - d$$

(8)

subject to

$$E(c_i^1 | p) - d \geq E(c_i^1 | q) \tag{9}$$

$$E(X_i - c_i^1 - c_i^2 | p) - F \geq 0 \tag{10}$$

$$E(c_i^2 | p) - m \geq 0 \tag{11}$$

$$E(c_i^2 | p) - m \geq E(c_i^2 | q) \tag{12}$$

The first three expressions are as in the individual contract design problem except that now d replaces D , to capture the idea that costly monitoring expenditure by agent 2 can directly lower agent 1's gains from moral hazard. Constraints (10) and (11) are participation constraints for the FI and the delegated monitor respectively. Since villager 2's monitoring actions cannot be observed by the FI, they too are subject to moral hazard, and the contract terms must provide incentives for agent 2 to monitor. The monitor's incentive compatibility constraint (12) can be expanded and rearranged to give:

⁵ See for example (Holmstrom and Tirole 1997; Hoshi, Scharfstein et al. 1993) and (Conning 1999).

⁶ Note that m could include helping actions to help the farmer prevent failure. In general a 'monitoring action' is any action that helps raise the rewards to diligence and/or lower the rewards to non-diligence.

$$c_s^2 \geq c_f^2 + \frac{m}{\Delta} \quad (13)$$

which states that agent 2 must be sufficiently rewarded for agent 1's successful outcomes and penalized for failures to have an incentive to want to raise the probability of success via monitoring. For a given value of c_f^2 , this incentive constraint implies that the intermediary must earn an expected remuneration, net of monitoring cost m , of at least:

$$\begin{aligned} E(c_i^2 | p) - m &= pc_f^2 + (1-p)c_s^2 - m \\ &= c_f^2 + p \frac{m}{\Delta} - m \end{aligned} \quad (14)$$

to remain a diligent monitor. If the participation constraint (11) is also to be met then this expression must be at least as large as what agent 2 can earn in her next best activity, which has been normalized to zero. Whether this participation constraint binds – in which case total cost of involving a delegate is only m -- or remains slack, in which case the monitor earns a rent, depends on how low the contract sets c_f^2 .

Define $F^m = pm/\Delta - m$. If the contract sets $c_f^2 = -F^m$ then (11) can be shown to bind exactly and incentives maintained, by setting $c_s^2 = -F^m + m/\Delta$. The delegated monitor would then earn remuneration $E(c_i^2 | p) = -F^m + pm/\Delta = m$, or exactly her reservation utility plus monitoring cost m . Note however that $c_f^2 = -F^m < 0$ as long as $p > q$ so the delegated monitor has to, in effect, be made a co-insurer/loan guarantor, absorbing part of the 'losses' from agent 1's project failures.

Agent 2's willingness to place enough of her own capital at risk is what credibly signals her incentive to monitor and thereby helps leverage or 'crowd-in' additional financial services from an outside FI who might otherwise have been reluctant to contract at all with agent 1. If we interpret F as the opportunity cost of loan funds needed to fund agent 1's project then we would interpret agent 2 as lending F^m and the uninformed outside FI providing the difference, $F^u = F - F^m$.

Local intermediary capital will however often be in limited supply, and the best monitors of poor people are often the other poor people who live and interact with them but have little working capital. What happens if agent 2 does not have any intermediary capital, so F must be provided exclusively by the FI? In this case $c_f^2 = 0$ so to maintain incentive constraint (13) at minimum cost we must set $c_s^2 = m/\Delta$. The delegated monitor will then earn $E(c_i^2 | p) = pm/\Delta$ implying participation constraint (11) must be slack because $E(c_i^2 | p) - m = pm/\Delta - m > 0$ as long as $p > q$. Intuitively, because the delegated monitor can't be punished for agent 1's failures she must be rewarded better for success to maintain incentives, giving the delegated monitor a strictly positive information rent, or *delegation cost*, pm/Δ which raises the cost of her participation. As this rent reduces

the remaining project surplus to be divided, higher delegation costs lead to higher implicit financing costs for agent 1 and clearly reduces the set of feasible arrangements. Delegation costs rise with the severity of the underlying moral hazard for agent 1, as captured by p/Δ and with the size of monitoring cost m , which shapes the scope for moral hazard by agent 2.

If a competitive market for delegated monitors existed in the village, then delegates with more capital of their own to place at risk will be in a position to offer the most attractive financial package because placing intermediary capital at risk lowers the information rent. The dearth of capital or diversification activities in many poor areas suggests that local intermediary capital may be in limited supply. In such a context outside financial institutions may have to recruit local monitors and accept delegation costs as the cost of providing staff incentives.

Diamond's (1984) seminal work on financial intermediation identified an important mechanism for lowering delegation costs.⁷ His insight was to note that if a delegate is placed in charge of monitoring several villagers financial projects, and if returns from those different projects are imperfectly correlated, then the monitor could be made to cover the losses on one project out of the 'bonus' received from another project succeeding. For example if agent 2 with no initial capital of her own were made to monitor n villagers just like agent 1 each with identical but stochastically independent projects, it can be shown⁸ that the delegation cost per borrower can be lowered from

$\frac{p}{p-q}m > m$ to $\frac{p^n}{p^n - q^n}m$ which falls to m as n tends to infinity. In other words, a

delegated monitor with no intermediary capital of her own can in principle lower her costs down to the level of a less diversified monitor who does have intermediary capital. Diamond argued that monitoring is delegated to specialized financial intermediaries such as banks precisely because incentive diversification effects reduce the delegation cost per borrower compared to less diversified financial institutions.

Unfortunately, a local intermediary often becomes a good monitor because he or she knows a lot about a specific area or line of business, but the correlation of project returns within such similar groups is likely to be high, so incentive diversification opportunities of the sort identified by Diamond are likely to remain limited. This may be one reason why microfinance has tended to be more successful in urban settings than rural settings (at least in Latin America). The heavy use local agents and monitored lending in microfinance may also help explain why leverage ratios at microfinance banks have remained far lower than in most other areas of banking (Conning 1999).

5 Other theories of the lack of intermediation

⁷ Diamond's original focus was a model of costly state verification, but the essential insight carries over.

⁸ See Conning (2000) and Laux (2001) for more detailed related analyses.

The above discussion explained how asymmetric information leading to moral hazard could lead to less financial intermediation than one might expect. Models of asymmetric information leading to adverse selection would have similar effects. In this section we consider a group of more eclectic models that explain the slowness in adoption of financial intermediation. The models and discussion emphasize the origins of asymmetric information and trust and how historical factors and non-economic considerations might prevent intermediation.

5.1 A network approach

Network approaches focus on the inertia of a system locked-in to an existing, but perhaps increasingly inefficient, set of overlapping, informal, local insurance arrangements and safety nets. Gilbert (1999) conjectures that these informal arrangements may deter development of more sophisticated intermediation:

many African farmers are implicitly co-insured within the village or extended family. This makes the purchase of insurance unattractive since the benefits from payoffs would be partially disseminated across the community while the costs remain theirs alone. A move towards the market requires that farmers become more atomistic in their behaviour.

There are two interpretations here. One is that villagers may be implicitly required to participate in a kind of basic needs insurance as part of their membership in the village community. In that case outside insurance for particular risks (price risk in Gilbert's case) is less valuable for the villagers; they cannot 'opt out' of the broader basic needs insurance. The other interpretation is that while these arrangements may have been the best possible given the constraints on larger-scale intermediation, the inefficiency becomes greater as the constraints on formal intermediation are relaxed through investments in public infrastructure, more effective technology, and improved reputation of formal institutions. Now, given a choice between local, informal insurance and intermediated insurance, people might prefer intermediated insurance. But the pre-existence of the local insurance network inhibits the switch to the new technology of intermediation.

A coordination problem exists: only if sufficient numbers of local residents make the switch to intermediated insurance will it gain the acceptance of others, but no individual has incentives to make the switch before the others. In the case of publicly subsidized safety nets, many authors have noted that offering such 'free' outside insurance immediately begins an unraveling of the local insurance arrangement. But for private intermediaries it is not clear whether offering initial subsidies will be an equilibrium strategy when the subsequent market for intermediated services is competitive.

Consider a simple model where agents have productive activities that generate one unit of 'extra' consumption goods in alternating years. These goods cannot be saved. Each person also has a stock of illiquid wealth that yields basic consumption (so the marginal utility of consumption in the years when a person does not get extra consumption is not

infinite). Obviously, the villagers can work out a sharing arrangement that is self-enforcing, if the game is repeated, where the degree of sharing depends on the degree of impatience of the agents and their relative bargaining power. The agent who gets the extra amount weighs the utility from consuming all of it against the loss of future smoothing. Now further suppose that each successful round of consumption smoothing builds up trust among the members according to a simple, decreasing returns function, and that this trust is a valuable stock that evaporates when someone cheats on the agreement or terminates the arrangement. As trust accumulates, the discount rate required to sustain the arrangement becomes less and less difficult to meet. Then the age of any particular local insurance arrangement determines the penetration capacity of an outside intermediary institution offering consumption smoothing services (through savings, for instance). Since the profitability of the outside institution also depends on the trust that it accumulates, it may not be able to penetrate villages with established local arrangements, even if its trust-generating technology is superior to that of the local arrangement.

It may be the case that imposing regulatory hurdles breaks down these informal, local arrangements and leaves the field clear for larger-scale intermediaries with better finance and trust-building technologies. A number of authors have hypothesized this effect, or even advocated it. Bossone (2000, pp. 19-20) notes that the ‘franchise’ value of an intermediary, by which he means the value of the reputation built up through honoring promises for quality service, improves the quality of financial intermediation:

Only a positive net franchise value from intermediation may attract investment in reputational capital from financial institutions. Use of mild regulatory restraints on market competition might increase the franchise value of domestic institutions, especially in least developed countries and in those emerging from long periods of financial repression... restraints such as (market-based) deposit rate ceilings and restrictions on market entry may have large rent creation effects that would allow banks to raise profits during the phase of initial reform.

Some economic historians have hypothesized that national regulatory intervention factored in undermining local financial institutions and safety nets.⁹ Regulations created a national market, with concomitant costs and benefits. One should not be too optimistic about this line of thinking in terms of actual implementation. The potential for ‘government failure’ applies, and legislatures or regulators may misread the nature of lock-in and destroy useful trust in a misguided attempt to generate economies of scale or scope.

⁹ Even the successful industrialized economies have followed very different institutional development paths, and more than one set of institutional arrangements for finance may emerge as equilibrium in a national economy, as the contrasting experiences of the United States and Germany suggest (Holmstrom 1996).

5.2 Social norms against cooperation with intermediaries

We may approach from an historical perspective the issue of origins of differential comparative trust in local versus outside financial institutions. Local groups have numerous norms that restrict economic activities. Many African societies have prohibitions on selling land to outsiders. Many have similar restrictions on where and to whom women of the village may marry. It is not too far to imagine that village societies have similar norms against revealing information to outsiders, particularly against selling information for profit.¹⁰

Such a collusive norm of non-cooperation may have arisen in response to shared experiences with intermediaries in colonial regimes. In peasant societies under colonialism, especially in areas of indirect rule, the 'agent' of the state, often a villager appointed because of his skills at translation, or willingness to curry favour with outside administrators, was able to link intermediation with monopoly over force, and so made people worse off. The relationship between peasants and colonial agent was quite literally a prisoner's dilemma, with the peasants as prisoners and the agent as jailer, and local norms developed to solve that dilemma. One can imagine a repeated prisoner's dilemma game, where villagers know that only randomly does the agent 'offer' a game where cooperation yields high payoffs. A sustainable strategy may be to never cooperate with the agent. And of course, from the villagers perspective the agents of the formal economy and state are one and the same; they collude and act together to extract resources from the villagers.

The state and villagers are continuously bargaining over division of local surplus. A change in relative threat points then changes the outcome of bargaining. A village decision to cooperate with intermediaries, seemingly in their interest, may lead to a change in threat points that could make villagers worse off. The problem here is the state or intermediary cannot credibly commit to refrain from using new information or resources or shift in threat point to extract more resources, rendering the village worse off.

The question then becomes how quickly these village norms against cooperation erode when more and more opportunities for profitable cooperation with intermediaries arise and when the link between formality and abuse of power diminishes. It should be recalled that the distinction between colonial and post-independent regimes has not been sharp, in terms of the exercise of arbitrary power. Contemporary regimes quite often use the same tactics of inviting intermediaries, even business intermediaries, to monopolize force.¹¹ There are few distinctions to be made, then, between agents of the police and agents of formal institutions; from the point of view of the villagers they work closely together. A

¹⁰ Platteau (2000, p. 12-14) notes that revealing information even within a village may be subject to numerous constraints having to do with face-saving and avoiding retaliation.

¹¹ Many of the problems of the oil multinationals in Nigeria stem from their willingness to blur the lines between their representative, who intermediates with villagers over contracts and access, and the repressive state military.

villager who becomes an agent of a formal institution comes closer to the locus of power, and comes closer to being able to exercise power himself.

Ironically, much recent public policy on intermediation is premised on the assumption that local social pressure can be used to reinforce the contracts entered into by the intermediary. But social pressure often works in quite the opposite direction: rather than generating peer pressure to repay, local society generates peer pressure not to 'fink' on a recalcitrant non-repayer.

5.3 A standard local political economy argument for opposition to intermediaries

Local politics is the mechanism through which local public goods are created and distributed and the local economy is regulated. Control over these processes yields benefits to those in power, benefits that are contested in the local political arena. Like any political system, maintaining power depends on relative, rather than absolute, differences in the ability to influence or persuade voters. If the decision about whether to allow or enable an intermediary to enter the village in the first place is a political decision taken locally, the political process may stymie the efforts of the intermediary to enter. This may happen despite the intermediary's potential to improve financial services for most in the village. If the service disturbs the relative balance of power within a village, it may be blocked. Alternatively relatively disadvantaged members of the community may block programme introduction for the opposite reason: they may feel the programme may be captured or misused by elites, giving them even more power in the community. Bardhan and Mookherjee (1998) develop a model that illustrates some of the important parameters that determine the degree and effects of programme capture.

The social distrust and political economy problems of intermediaries perhaps explain why so many microfinance institutions are reluctant to squarely address the fact that their services rely on the unpaid labour of a village president and treasurer, who are entrusted with basic bookkeeping, enforcement and monitoring tasks. These villagers ought to be the ideal recruitment ground for a new category of intermediary agent placed on incentive contracts. The reluctance of microfinance institutions to hire local people to carry out tasks is strongly suggestive of the seriousness of the problems discussed above.

6 Public policy to improve intermediation

The theoretical discussion of the preceding two sections has some implications for policy. The challenge is to generate institutional innovations that will more quickly address the problem of delivering financial intermediation to the most poor. Such innovations serve two functions of potentially offering self-selecting redistribution with less leakage and also relieving the inefficiencies associated with low asset positions impeding choice of productive activities.

Governments are usually less informed about local economic circumstances compared with private parties. Thus, the main role for public policy in fostering and promoting

greater levels of intermediation are twofold. First, removing entrenched restrictions, such as hurdles for the legal establishment of financial providers to the poor, draconian anti-usury laws, etc. At best, these laws often are ignored in the breach, and cause financial firms to obfuscate their records. At worst, they completely stymie formal sector intermediation. Second, providing essential public good inputs, as in a legal system that might facilitate lower cost third-party enforcement of contracts, prudential regulation, or legislation to promote public or private credit bureaus that improve the distribution of verifiable credit histories (Klein 1992). Hernando de Soto (2000) argues that the lack of clearly defined legal property rights for 400 to 600 million squatters worldwide strongly limits poor people's ability to utilize the assets they control to leverage additional resources.

Unfortunately, the literature is filled with examples of failed imported institutional innovation. The dismal record of credit cooperatives of the 1970s is a case in point. Another is the attempt by colonial government to introduce courts and land as collateral to facilitate the development of credit.¹² More recent property titling programs in developing countries reveal more mixed results. Studies of the impact of a large scale Peruvian urban squatter titling program (designed in part by Hernando de Soto) on credit availability have not found much evidence of a very significant credit supply-response, but these markets may take time to develop (Field 2002). Property reforms by themselves do not appear to create deeper financial markets, and some evidence suggests that property titling reforms in contexts where credit markets already fail can contribute to land concentration. Carter and Olinto (2003) report for example that the positive impact of a land titling program on credit in Paraguay was almost exclusively confined to larger farms.

These mixed experiences highlight the need for continued learning and experimentation. Most developing countries have a long way to go in terms of implementing such public policy interventions (or non-interventions as the case may be). Moreover, successful public action along these lines cannot be quick, which is unfortunate for the poor. For infrastructure investments (in legal systems) to promote trust and lower the cost of contract enforcement, they have to become legitimate. They have to become the 'rules of the game' that are no longer contested. Legal capacity and financial institutional infrastructure is developed in the process of making and enforcing real decisions, not by just by passing laws and training bureaucrats.

These reforms will not be enough. Even with more efficient private sector intermediation, a large number of poor and vulnerable households would remain imperfectly insured and with limited access to credit. This is because of limited wealth, moral hazard and adverse selection problems, and the other local social and political problems discussed above. Public policy and pro-competitive policies may reduce these barriers, but irreducible transaction costs and other trading frictions are nonetheless likely to remain.

¹² Kranton and Swamy (1999) examine the experience of India.

The lessons of the moral hazard approach to intermediation suggest that policies to support the creation of more financial intermediation should focus on 'growing' intermediary capital. Donors may be encouraged to make equity investments in the funds of microcredit and micro-insurance organizations. Similarly, policies by microfinance organizations to build up capital locally through deposit mobilization and new savings instruments can help organizations build up intermediary capital and then leverage outside funds more effectively. The promotion of 'sustainable microfinance' in policy circles in recent years has helped focus attention on the role of hard budget constraints and incentives. But hard budgets are in principle also consistent with subsidies to the activities of new financial intermediaries, if effective and credible mechanisms for delivering those subsidies can be found.

Government guarantee funds in and of themselves may help local intermediaries to leverage outside funds from private sources. Guarantee funds act as monitors and guarantors of the monitoring intermediaries who try to leverage funds from outsiders. But developing countries have had many very bad experiences with guarantee funds (Levitsky 1997). To be effective, these funds have to themselves engage in intensive monitoring activities. Because the funds are government entities, they usually are prevented from using high-powered incentives to ensure bureaucratic effort and are prone to political capture.

One innovative approach was Chile's CUBOS programme that auctioned government-funded vouchers amongst banks willing to lend to small and medium enterprises. Banks and leasing companies purchased these vouchers at auction at an average of about 75 cents on the dollar, but were then able to use these vouchers at par to purchase private insurance against loan non-repayment. The system was set up as a deliberate attempt to stimulate new private intermediation and at the same time target loan resources to small businesses without an explicit government loan guarantee fund (Arrau 1997). It helped foment the entry of new participants in the market for small business loans and private loan insurance.

Non-governmental agencies have had some success in overcoming the problems of intermediation identified above. Some microfinance institutions, for instance, ameliorate the delegated monitoring problem of limited liability by substituting (or more often, complementing) monitoring by a delegate with peer monitoring by a group. They also mitigate moral hazard problems by narrowing the product offering to products where the scope for moral hazard is small. On the lending side, loans are kept small and repayment periods short. Frequent group meetings with regular repayments help identify problem areas where monitoring can become more intensive.

Tentative efforts to intermediate micro-insurance are similar. Programmes are sometimes bundling credit provision with death insurance or basic health insurance, where borrowers are obliged to purchase the services of a non-fee based health clinic. The insuree is free of course to seek alternative treatment, but the local health clinic provides a floor of basic health service in case of need. Making this participation mandatory eliminates the adverse selection problem. Most medical costs in developing countries are

associated with easily cured or prevented disease, so moral hazard costs are not a large concern.¹³

There would seem to be opportunities for more bundling of this kind. For instance, there are other sources of risk that might be profitably insured. One important one for farmers and microborrowers is commodity price risk. In many microcredit programmes loans are taken for the purpose of stocking commodities on the expectation that prices will rise, as they generally do. But prices are risky, and sometimes they fall. A microfinance institution might find that instead of small loans where repayment potential is largely independent, its portfolio consists of thousands of people who have bet on the same expected movements in agricultural prices. Offering price insurance seems to be a natural way to increase expected benefits for both borrowers and microfinance institution.

The microfinance institution has to play the intermediary, in the absence of well-developed forward, futures or options markets. There seems to be little research in understanding the specific reasons why such simple insurance contracts are not offered by existing intermediaries. Gilbert (1999) speculates that rural banks in developing countries lack even the basic expertise needed to price such contracts (estimating future crop prices, monitoring crop developments, analyzing historical price patterns). If sold in advance, for small sums to rural microfinance clients, the possibilities of collusion and price manipulation seem small. Demand for such contracts may well be small, but then we are back to assuming that the lack of intermediation really is nothing more than a lack of demand because of relatively inexpensive local intermediation, self-insurance, and crop and activity diversification.

With regards to the distrust of intermediaries, it is worth recalling that microfinance intermediary institutions are usually motivated by low-powered incentives. They are non-profits, and often bundle their services with rhetoric emphasizing social change or with expenditures on local public services. These features give the intermediary more credibility than someone intermediating for profit; they are perhaps perceived as different from the state.

Microfinance institutions also use a 'blanket' approach that potentially mitigates the political economy problems. Because they are invariably regional in scope, the programmes give incentives for elites to embrace rather than undermine projects. Elites are enmeshed in their own political struggles with elites from other regions, for control of regional institutions. Programmes that aid elites in other villages must then be embraced by local elites. While their relative position might suffer within the village, they may prefer that to losing ground in their regional struggles among elite groups.

¹³ Providing catastrophic health insurance is another matter altogether. Insuring income losses due to sickness is especially difficult because of possible collusion between doctors and patients. In largely illiterate societies it is hard to see how any system for longer-term or more costly illnesses could be insured in a sustainable way. Families must bear the costs of self-insurance.

7 Conclusion

The financial system of an economy is the nexus of contracts and intermediary structures that comprise an often-complex web of transactions and agency relationships between different parties in the system. Financial systems vary immensely in structure and complexity. In some societies where regional or national level financial intermediation is weak, the financial system may be thought of as a set of islands of local financial transactions, but with few bridges or communication links between islands. Where financial intermediation is more developed, a dense network of actual or potential bridges across islands will be in place.

In the course of the development process financial markets become more integrated, and people benefit from the specialized services of financial intermediaries who are able to bridge the gaps between local informal and national financial institutions. But financial integration can happen rapidly or slowly. We have reviewed some basic explanations of the slowness of intermediation. The first account focused on problems of information asymmetry, lack of intermediary capital, and crowding-out. The second focused on recent literature on lock-in, suggesting that individuals already imbricated in existing financial networks may have few incentives to 'jump ship' to deal with an intermediary from the more anonymous 'national' market. The third offered an anthropological account more appropriate to village and 'closed' societies, where norms against cooperation with outsiders may be strong. The fourth noted a standard political economy model of resistance to new institutions because of possible shifts in relative bargaining power.

We should again emphasize that the kinds of supply-side innovations and issues we have discussed are only relevant once the basic groundwork of enforceability has been laid, through the maintenance of legitimate legal institutions. Given the enormity of that problem for many of the poorest countries, especially in sub-Saharan Africa, and given that we know so little about the empirical relevance of the theories discussed here, policymakers should be prudent at this point, looking to undo the negative effects of bad regulatory policies first rather than introduce new programmes and regulations.

References

Table 1
Moral hazard and intermediaries in financial transactions

	<i>Action of intermediary</i>	<i>Institutions' concerns about agent</i>	<i>Villagers' concerns about agent</i>	<i>Agents' concerns about institutions</i>
<i>Money transfer</i>	Receive and disburse money over space	Agent might collude with others to disburse funds fraudulently	Agent might miscount or demand bribe	
<i>Savings</i>	Receive and disburse money over time	Agent might not do proper book-keeping	Agent might deliberately falsify savings entries in passbook	Institution might not pursue sound financial management; might accuse agent of embezzlement
<i>Pawning</i>	Receive goods and disburse money over time and subject to conditions	Agent might buy and sell goods on the side	Agent might sell goods early	
<i>Lending</i>	Disburse and collect money over time	Agent might not monitor or enforce repayment, might collude with borrower, or might demand bribes	Agent might not record loan repayments; might disburse less than registered loan	Institution might not pursue sound financial management; might accuse agent of embezzlement
<i>Insurance</i>	Offer contingent contracts, verify outcomes, disburse claims	Agent might not verify claims, collude with insuree, or might demand bribes	Agent might deny claim arbitrarily, or might demand bribe	
<i>Safety net</i>	Verify outcomes, disburse claims	Agent might disburse funds to ineligible recipients, might demand bribes	Agent might deny claim arbitrarily, or might demand bribe	Institution might make proper performance too costly

Figure 1: Alternative contract structures in a simple village economy.
 Dashed lines indicate outcome-contingent contracts.
 Solid lines indicate monitored or action-contingent contracts.

Contracts with FI	a. Locals cannot monitor	b. Locals can monitor
1. None	FI B1 \leftarrow ----- \rightarrow B2 Imperfect local mutual insurance	FI B1 \leftarrow ===== \rightarrow B2 Efficient local mutual insurance
2. Exclusive Bilateral	FI B1 \swarrow ----- \searrow B2 Bilateral insurance	FI B1 \swarrow ===== \searrow B2 Bilateral insurance
3. Inter-mediated	FI B1 \swarrow ----- \searrow B2 B1 \leftarrow ----- \rightarrow B2 Crowding-out	FI B1 \swarrow ===== \searrow B2 B1 \leftarrow ===== \rightarrow B2 Crowding-in (delegated monitoring)

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