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# **Institutional Analysis of Financial Market Fragmentation in Sub-Saharan Africa**

A Risk-Cost Configuration Approach

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## **Abstract**

The paper examines the source of financial market fragmentation in sub-Saharan Africa in the framework of institutional economics. Based on fieldwork data from Ghana, Malawi, Nigeria, and Tanzania, it analyses financial risk management, the transaction costs for loan screening and monitoring, and contract enforcement. It shows how, faced with various institutional constraints, the range of clientele selected by formal and informal lenders becomes both narrow and at the extreme market-ends. It evaluates the prevailing state of managing risks for market structure, and binding institutional constraints for market transformation and deepening in sub-Saharan Africa.

Keywords: financial markets, institutions, risk-cost analysis, sub-Saharan Africa

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## 1 Introduction

In sub-Saharan Africa (SSA), financial markets have played a very limited role in the mobilization of resources to facilitate growth-enhancing private investments. Despite various efforts through financial sector reforms, financial markets remain largely fragmented with substantial gaps in the financing of economic activities by private agents. Based on findings from surveys of formal and informal financial institutions and their clients in Ghana, Malawi, Nigeria and Tanzania,<sup>1</sup> we argued elsewhere (Nissanke and Aryeetey 1998; Aryeetey et. al 1997) that the continuous poor performance of financial systems can be partly explained by the high degree of financial market fragmentation.

The growing literature on institutional economics provides clues to possible sources of this market condition. In contrast to the Walrasian notion of markets, institutional economics views markets as broad institutional structures and arrangements that support and govern the process of exchange with the aim of minimizing transaction costs. Like any other institutions, markets exist to reduce uncertainty by establishing a stable structure to human exchange and interaction (North 1990). Specifically, as social institutions, markets structure, organize, and legitimize contractual agreements and the exchange of property rights. In this context, Coase (1992) outlines the concept of efficient property rights, since the institutional setting that governs the exchange process, including an appropriate system of property rights, becomes an important prerequisite for the efficient functioning of markets. In Coase's view, the efficient system of property rights is the one that results in minimizing transaction costs for market operations.

Advancing the theory of imperfect information, Stiglitz (1989) also defines markets as an important set of institutions. In particular, it is emphasized that markets operate in environments characterized by imperfect, costly, and incomplete information, and hence, appropriate governance mechanisms are required to eschew the agency problems arising from opportunistic behaviour, including moral hazard and adverse incentives. Thus, institutions are seen to be created and refined to deal with various forms of market failure.

Indeed, Stiglitz's theory of imperfect information is in many respects comparable to the analysis advanced by institutional economists such as Coase (1992), North (1990) and Williamson (1985, 1995). Both schools criticize the conventional neo-classical model for failing to include the role of transaction costs in exchange and for its inability to explain the role of institutions in the formation and operation of markets by minimizing transaction costs and reducing uncertainty. Both schools emphasize the costliness and incompleteness of information and enforcement on which agents in the real world have to act.

Indeed, emphasizing the presence of perverse market failures, other institutional economists such as Aoki (2001) and Young (1998) conduct their institutional analysis more or less exclusively on agents' behaviour and their strategic interactions in a game-

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<sup>1</sup> For detailed fieldwork methodology, samples and results, see Aryeetey (1994, 1996), Bagachwa (1995, 1996), Chipeta and Mkandawire (1996a, 1996b), Soyibo (1996a, 1996b).

theoretic framework, providing a 'behavioural' micro analytic perspective of institutions. Thus, they focus more on the dimension of institutions as outcomes of game equilibria, in particular as those of repeated games.

Arrow (1998) further notes that the role of non-market institutions is to coordinate expectations as well as to enforce incentives in the presence of asymmetry of information, market failure (particularly with regard to contingent future markets), and the need for coordination due to externalities and increasing returns. In this sense, institutions could be seen as serving as mechanisms and means to deal with a whole set of market failures (for example: public goods, externalities, imperfect and costly information, and the wedge between social and private benefits/returns). As Bardhan (2005) notes, one of critical functions of institutions is to correct coordination failures.

Institutional economics has comparative advantages over the standard static economic theory in dealing with the determinants of change over time as it places the nature and sources of dynamism at the centre of analysis (Harriss et al. 1995; Bardhan 1989).<sup>2</sup> It can offer a coherent account of institutional changes necessary for economic development and market transformation. For example, North (1989, 1990) suggests that the sources of low-growth are associated with the inability of economies to transform institutional structures in response to new technological and market opportunities. More specifically, he explains the evolution and transformation of markets as social institutions in terms of a trade-off between transaction costs and economies of scale, as increasing specialization and division of labour proceeds.

North (1989) sees the evolution of markets as a movement from personal exchange towards the impersonal exchange of modern economies. Personal exchange involves local trade where specialization and division of labour are extremely limited, and individuals often engage in repeated dealings among themselves in a geographically and socially confined community setting. Transaction costs in personal exchanges are low, because transactions are governed by social codes and norms with minimum monitoring and enforcement costs. Personal exchange then evolves into limited impersonalized exchange that involves some long distance and cross-cultural trade. This type of exchange requires governance mechanisms, which, in historical terms, would involve dependence on kinship links, bonding of labour, the exchange of hostages, or a merchant code of conduct.

Finally the advanced impersonal exchange of modern economies emerges. This requires third-party enforcement rules and other elaborate institutional structures to reduce transaction costs with effective formal systems of monitoring and mechanisms for enforcing contracts and property rights. An extensive informational network which can provide market participants with timely and comprehensive information is another critical prerequisite for market development. For markets to operate efficiently, access to information should not be discriminatory and rules governing market operations should be transparent and comprehensible to all market participants.

Importantly, North emphasizes that market transformation from the stage of personalized exchange towards the modern impersonal mode of exchange does not necessarily take place automatically. For markets to transform and graduate to a higher

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<sup>2</sup> For more detailed discussion on the evolution and dynamics of institutional changes, see Niskanen and Sindzingre (2005).

stage, an appropriate institutional environment and governance structure should be developed to reduce uncertainties and transaction costs. The history of commerce illustrates how this requirement led to the formation and rise of city states initially and nation states later on, which were capable of specifying property rights and enforcing contracts (North 1989, 1990). There was a need for self-enforcing institutions and sanctions for free riding and the breach of norms as foundations for impersonal exchanges, trade, credit, and markets as shown in the examples of the differences in guilds and business coalitions between the medieval Maghribi and Genoese traders (Greif 1993; Greif et al. 1994). These studies underscore the importance of establishing credibility in institutional environments and arrangements.

In our view, this analytical perspective of market evolution provides a refreshing framework for understanding the institutional sources and constraints of market fragmentation observed in SSA. One of the critical questions to be raised in the context of sub-Saharan economies is why informal financial institutions find it hard to transform and graduate into formal institutions that could handle more impersonal financial transactions. What are the institutional constraints for their successful graduation? Which kinds of costs are involved for their transformation (transformation costs), so that the process of market expansion and deepening could take place with the supporting institutional structure?<sup>3</sup> What is a real impediment that hinders institutional innovation for market development in Africa?<sup>4</sup>

A further interesting twist comes from the fact that the market structure prevailing in these economies is not an outcome of the natural course of market evolution, with the realization of higher rates of return through the gradual formalization of markets as the channel. In SSA economies, as in many other developing economies, formal institutions co-exist alongside informal traditional institutions as a result of modern institutional structures being superimposed on traditional societies, often without necessary adaptations. This condition could result in an extreme form of market fragmentation and segmentation with few effective linkages between formal and informal institutions.<sup>5</sup> Consequently, the financial system as a whole is unable to deal with the risks inherent in SSA economies.

Conceptually distinguishing fragmentation from segmentation-cum-specialization, this paper examines the institutional source of market fragmentation by analysing how financial risks are managed in different market segments and what sort of transaction costs are incurred by formal and informal institutions in the process of loan screening and loan monitoring and contract enforcement.<sup>6</sup> It evaluates the implications of the

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<sup>3</sup> Here, we define transformation costs in relation to market transformation as the costs involved in transforming the form and nature of modes of market exchanges. Thus, they are different from those given by North (1990: 6). North's transformation costs are referred to as the traditional production costs of capital, labour, technology, and natural resources.

<sup>4</sup> Fafchamps (2004) lists innovation failure, along with authority failure and coordination failure, as one of the critical features of financial markets in SSA.

<sup>5</sup> See Sindzingre (2006) for a critical assessment on a rather over-simplistic, dichotomizing application of the concepts of 'formal' and 'informal', found in institutional economics. Here, 'formal' and 'informal' finance are used to follow the convention in the literature of financial economics.

<sup>6</sup> Conning and Udry (2005) also discuss fragmentation of rural financial markets in low income countries.

prevailing state of managing financial risks for market structures. It addresses the institutional constraints facing financial systems for market transformation and development.

The paper is structured as follows. Section 2 presents the risk characteristics of African financial markets and a summary of the main features of performance in their formal and informal segments. Section 3 analyses the institutional arrangements of each market segment in handling credit risks. Section 4 presents our estimates of the transaction costs associated with the prevailing methods of risk management. Section 5 summarizes and concludes with an evaluation of the implications of these arrangements for the financial market landscape in SSA.

## **2 Risk characteristics of African financial markets and institutional performance**

Lenders are generally exposed to two types of risk in their dealings with borrowers: systemic and idiosyncratic. The high systemic risk originates from unpredictable variations in income as a result of exogenous factors. The high idiosyncratic risk stems from the costly acquisition and asymmetric distribution of information, which can lead to the pervasive problem of moral hazard and adverse selection. Both types of risk are high in SSA countries. Systemic risks are high, as the economies are continuously exposed to large aggregate externally- and policy-generated shocks as well as to high political instability and civil strife (Collier 1996; Adam and O'Connell 1999). Consequently, economic transactions are conducted in highly uncertain and risky environments, which engender eminently more volatile returns to investment and highly variable income streams than in other parts of the world.

The high-risk environment and the frequent incidence of large income shocks heighten demand for mechanisms and institutions for risk management, even if only for sheer survival. Indeed, in many low-income agriculture-based economies, where possibilities of risk management through upward diversification of economic activities have not been exploited, a variety of institutional arrangements such as sharecropping or labour-migration have often served as risk-coping and risk-sharing as well as insurance mechanisms (Mordoch 1995; Bardhan and Udry 1999). However, where aggregate systemic risk is high, effective insurance against large income fluctuations is difficult to achieve through community-based risk-pooling mechanisms (Dercon 2004; Townsend 1995; Conning and Udry 2005). Many recent empirical studies reveal only limited risk-sharing even in small village communities.<sup>7</sup> When insurance markets are missing and insurance possibilities are limited, an act of intertemporal trade to effect resource transfers over time such as saving and credit becomes vitally important for consumption-smoothing (Besley 1995a, 1995b). Credit transaction is seen as an insurance substitute in such circumstances, when market opportunities for risk-sharing are limited (Besley 1995b).<sup>8</sup> Seasonal variability of agricultural production and income

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<sup>7</sup> See Conning and Udry (2005) for the results of empirical tests of the efficient risk-sharing and full insurance hypotheses.

<sup>8</sup> As Besley (1995b) notes, while the distinction between credit and insurance is often blurred, a pure credit arrangement rather than a contract with contingencies is unlikely to be optimal in many risky environments.

in rural areas provides an added imperative for short-run saving-credit facilities as a liquidity management device over the production cycles (Besley 1995b; Conning and Udry 2005). Thus, there is potentially immense demand for financial intermediation as an effective device of risk-pooling and risk-sharing in SSA.

However, financial markets in SSA have been unsuccessful in meeting this potential demand for consumption-smoothing beyond spatially confined community levels as well as in serving the financial needs of real sector activities economy-wide. This condition partly reflects a typical dilemma associated with a vicious circle in underdeveloped and less-diversified economies. The portfolio structure of both lenders and borrowers is constrained by low-risk diversification in their asset composition, making it difficult to offset financial loss in one activity against the gains from another through spatial risk-pooling. A wave of loan defaults triggered by an increase of systemic risk can be propagated nationwide due to the high risk-covariance of economic activities. At times of negative aggregate shocks a general crisis could ensue rapidly because the severely impaired net worth borrowers could lead to distress in the financial sector as lenders are incapable of dealing with high aggregate systemic risks.

The underdeveloped financial markets in SSA can also be attributed to the high idiosyncratic risk lenders face when financial transactions are conducted beyond community levels because of poor endowments of information capital. This condition can be effectively analyzed with the aid of the recent theoretical advancement in information economics. Pioneered by Stiglitz and Weiss (1981), a large number of theoretical papers have explored the implications of imperfect information and incomplete markets for contracts in credit markets in low-income environments.<sup>9</sup>

For example, Hoff and Stiglitz (1990) and Conning and Udry (2005) explain segmentation into formal and informal markets typically observed in developing countries by the structural differences in the cost and risk characteristics of different types of transactions. This is a clear elevation from the previous, almost exclusive, reliance on the policy-based explanation embedded in the financial repression hypothesis (Fry 1982, 1988; Roe 1991) for this critical issue in finance and development. The financial repression hypothesis is mainly concerned with parallel market activities induced by pervasive government controls and regulations. While the new understanding derived from information economics points to a possibility of segmentation leading to market specialization, where each market segment serves specific market niches by exploiting comparative advantage for assessing borrower-specific idiosyncratic risks in an environment of imperfect information. In the following sections, this theoretical perspective is adopted to explain the prevailing financial market structure in SSA.

## **2.1 Performance of formal financial institutions**

By the early 1980s, the formal financial sector in many SSA countries had typically achieved a certain degree of diversity as a result of the efforts of the newly independent governments to re-shape the post-independence financial landscape. As part of their

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<sup>9</sup> Alderman and Paxson (1992) and Conning and Udry (2005) among others provide a useful bibliography of such studies.

independent nation-building programme, they established indigenous formal institutions and attempted to diversify the institutional structure of the financial system and extended banks' branch networks. However, the risk-management capacity of these formal financial institutions remained very restricted indeed. There is little doubt that the long history of wide-spread political interference and control of banks' operations impaired the risk-handling capacity of these institutions.

Critically, the manner in which 'repressive' policies were implemented in SSA hindered the development of institutional capacity among financial institutions. The rationale of commercial viability was largely subsumed by the dictates of other government policy objectives, as well as political goals or capture (Nissanke and Aryeetey 1998; Brownbridge and Harvey 1998). Many banks, in particular those government-owned banks operating on a soft budget, failed to develop the capacity for risk assessment and monitoring of their loan portfolio. Savings mobilization was often not actively pursued. There was neither active liquidity and liability management nor any incentive to increase efficiency, often resulting in increased costs of financial intermediation. The regime of financial repression discouraged banks from investing in information capital, crucial for the development of financial systems. Institutions have typically been burdened with severe agency problems in dealing with idiosyncratic risks, that is, the problems caused by costly and imperfect information such as adverse selection, moral hazard, and contract enforcement (Nissanke and Aryeetey 1998).

Financial sector reforms have been implemented to address the problems arising from repression, guided largely by policy prescriptions advanced by the financial repression school. Under the two fundamental premises of liberalization and balance-sheet restructuring, interest rates and credit allocation have been decontrolled and efforts have been made to strengthen the regulatory framework. Extensive restructuring and recapitalizing operations have been mounted for distressed banks.<sup>10</sup> Despite the differences in initial conditions, policy sequence, and the pace of reforms, the expected positive effects from liberalization (in terms of savings mobilization and private sector credit availability) have been slow to emerge in all our case-study countries.

Banks' balance sheets remain precarious. In places like Ghana and Malawi, where reforms have been relatively orderly, most banking institutions have not yet developed the capacity for risk management. Instead, they continue to operate in an extremely constrained environment with underdeveloped institutional infrastructure and a poor information base. The portfolios of banking institutions have been continuously dominated by two characteristics: an extremely high incidence of non-performing loans and excess liquidity.<sup>11</sup> The persistence of these conditions, despite radical changes in the policy environment, can be explained by the institutional environment that has restricted banks' risk management and prevented improvement in their operational practice.

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<sup>10</sup> Popiel (1994) provides estimates that the cost of bank restructuring operations in about 20 SSA countries between 1984 and 1993 was often equivalent to between 7 per cent and 15 per cent of their gross domestic product (GDP). Deschamps and Bonnardeaux (1997) report that the direct cost of bank restructuring ranged from 20 to 50 per cent of GDP in the most affected SSA countries.

<sup>11</sup> See Chapter 4 of Nissanke and Aryeetey (1998) for a detailed analysis of these phenomena and factors explaining them.

The lack of changes in institutional environments explains the paucity of savings mobilization efforts, the 'low-lending trap' in the presence of latent excess demand for credit and loans, and the de-facto crowding out of private finance by public financial requirements. These factors have combined to form a general post-liberalization credit crunch in many countries, encouraged by the presence of high-yielding government paper or bank bills.<sup>12</sup>

## 2.2 Informal finance

Informal financial transactions can be grouped into non-commercial, such as transactions between relatives and friends or small-scale group arrangements, and commercially-based, conducted by savings collectors, estate-owners, landlords, traders, and money-lenders.<sup>13</sup> In SSA, most informal financial agents/arrangements tend to specialize in either lending or savings mobilization, while arrangements engaging in both activities typically provide their services to members only.

Informal financial units have been developed in response to the demand from a distinct clientele, and each unit tends to serve a particular market niche (Aryeetey and Udry 1997). Thus, the relative importance of different categories of the informal sector varies widely between countries in SSA. Furthermore, all four of our country studies suggest that the informal sector may far exceed the formal sector in coverage, influence, and even value transacted. Rather than a contraction in response to reform as predicted by the financial repression hypothesis, there has been a rapid increase in demand for informal savings and credit facilities in the more liberalized environment of recent years.

The recent increase in demand for informal finance is related to the greater trading opportunities that emerged in the adjustment period. It can also be explained by an increase in unsatisfied demand for formal sector credit, which has been continuously restrained as part of stabilization efforts. While formal institutions have continued to find it hard to overcome their inherent constraints during the reform process it is the informal financial sector, demand-driven by its nature, that has responded first to the growing demand for financial services.

However, informal activities continue to specialize in small and short-term transactions or seasonal requirements, such as cash-flow and liquidity management for consumption smoothing at a low-income equilibrium. Saving cycles are very short. For example, the facilities of savings collectors are used primarily to keep deposits secure and savings are returned to the depositors within the shortest possible time. Thus, in spite of the acknowledged potential of informal units as deposit mobilizers, they have never been seen as having a key role in financial intermediation in the region. While many informal

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<sup>12</sup> A similar condition is observed across many countries in SSA. See, for example, Kasekende and Atingi-Ego (2003) and Ngugi (2001) for Uganda and Kenya respectively.

<sup>13</sup> Besley (1995b) uses the term 'nonmarket institution' as a catchall for these different informal financial institutions in reference to the fact that these institutions make relatively little use of formal contractual obligations enforced through a codified legal system. For theoretical models of these nonmarket institutions such as group lending and credit cooperatives see Besley and Coate (1995) and Banerjee et al. (1994) respectively.

segments grew with demand for their services, they face difficulties moving beyond their particular sphere of specialization. Compared to other developing regions, informal operations in SSA have been more confined to traditional forms of activities without transforming into higher modes of operation.

### **3 Institutional arrangements for risk management**

With limited opportunities for risk management through income smoothing, borrowing in SSA is largely occasioned by the need to smooth consumption in the face of erratic income flows. As borrowers seek to cushion themselves against imminent consumption risk, they may choose to smooth consumption across time and space. Spatial consumption smoothing amounts to pooling idiosyncratic risks of people/households and co-insuring against risks (Besley 1995a, 1995b; Townsend 1995; Dercon 2004). The search for other households as an insurance often embraces such social features as ethnicity, religion, business relations, neighbourliness, kinship, and family because the effectiveness of mechanisms for containing idiosyncratic risk depends on the amount and quality of information on the part of insurers and the insured, and their ability to enforce the contracts.

Dealing with idiosyncratic risks in lender-borrower interactions can be effectively characterized by a principal-agent relationship within a game theoretic framework (Conning and Udry 2005). In this relationship, lenders are preoccupied with the question of whether they will be repaid. When the effectiveness of formal legal enforcement mechanisms remains in doubt, the question of why borrowers bother to repay gains greater importance. If the relationship between borrower and lender is exclusive and repeat transaction is critical, as we find in many rural credit markets and most group arrangements, the promise of repeat borrowing and social sanctions serve as effective incentives for borrowers not to default. Clearly, borrowers repay loans for fear of losing access to future loans upon default (particularly in schemes involving groups). In addition, defaulters are generally sanctioned by the community as a whole. Social sanctions could include exclusion from other financial transactions (such as informal insurance) or other economic or social penalties. Social sanctions are available only in reasonably cohesive social groups, providing yet another reason for the propensity to transact credit within community-based groups.

However, as credit relationships are extended beyond this 'exclusive' relationship and repeated personalized transactions, other institutional arrangements become necessary to sustain transactions. Collateral is one such institutional innovation to deal with the incentive problem. Collateral pledged in exchange for loans serves three important functions: (a) directly reducing cost to the lender of a loan default; (b) adding an incentive for the borrower to repay, thereby reducing the moral hazard; and (c) mitigating the problem of adverse selection by enabling the lender to screen out borrowers most likely to default (Udry 1990).

Hence, a collateral asset should possess several attributes: (a) it must be easily appropriable by the lender; (b) it should have a secondary market; and (c) it should not itself be subject to moral hazard problems or other collateral specific risk (Binswanger et al. 1989). Although land is a preferred asset as collateral, land markets are often underdeveloped. Other assets commonly used as collateral in rural credit transactions

include jewellery or other household items as well as economic trees and standing crops, livestock, and farm equipment (Bardhan and Udry 1999). As these assets are not perfect as collateral assets with the moral hazard problems, collateral substitutes such as third-party loan guarantees, interlinked transactions, and a joint liability are also widely used for risk diffusion.

With spatially limited and costly information as well as costly and time-consuming contract enforcement in SSA, lenders operating beyond a community have to devote considerable resources to screening and monitoring borrowers to mitigate the problems of adverse selection and moral hazard. ‘Outside’ formal agents are not able to access the social sanctions that are available to informal localized lenders in this type of setting.

On account of all these institutional conditions, both formal and informal lending institutions attempt to minimize risk through loan administration practices that place greater emphasis on screening than on monitoring or contract enforcement. Further, in such extreme institution- and information-constrained economies, lenders’ perceptions about different categories of borrowers are frequently used as a first step towards screening.

We now turn to the key features of risk management methods adopted by formal and informal lenders found in our survey.<sup>14</sup>

### **3.1 Risk perception, screening and monitoring**

#### *Formal finance*

*Risk perception and loan screening.* It is more difficult and costly for formal institutions to obtain accurate information about smaller borrowers. Our fieldwork confirms that banks’ risk perceptions are less favourable for small borrowers, which is well known by such small borrowers. So these small borrowers are less likely to pass a first hurdle in accessing formal credit. Furthermore, many banks confirmed that the higher interest rates charged for smaller borrowers are attributed to differences in perceived risk. The increased centralization of loan administration under reform programmes to achieve greater control over loan quality has often led to increased risk aversion, contrary to the hope that market liberalization would expand the scope of banking operations to a wider group of private agents.

Equally, in screening, banks are disadvantaged in acquiring information on personal integrity. While they try to obtain information about potential borrowers and their current indebtedness from third parties (including approaching other banks for references), their attempts are usually unsuccessful. The most reliable information banks can access is borrowers’ account history available at their own branches. Given this situation, judgements are based largely on project documentation and bankers’ personal knowledge of the proposed projects. They can carry out major feasibility studies, which inevitably increase screening costs. As standard practice in the screening process, project sites of small agricultural and large enterprise clients are visited. Indeed, time

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<sup>14</sup> For more detailed fieldwork methodology and results, see Chapters 5 and 6 of Nissanke and Aryeetey (1998).

spent in verifying information for project analysis, with its associated salary and support costs, was cited to be the largest single impediment to lending to small borrowers, as the fixed costs of acquiring information that is independent of loan size are viewed too high. In assessing project creditworthiness, the return on projects is mentioned as the most important criterion by all the bankers surveyed.

Many banks, especially those undergoing reform, recognize the problems caused by the absence of credit reference bureaux and poor interbank co-operation. The lack of good market information on supply, demand, and costs also hinders project assessment. Banks increasingly recognize the need to pursue more character-based assessments for small borrowers who cannot supply the documentation and financial information demanded for project appraisal. Despite this, reforms have not yet led to any major changes in the assessment of creditworthiness. Banks have begun to look for alternative securities, such as blocked accounts and letters of undertaking, but landed property remains the dominant form of collateral.

The mention of collateral in the lending criteria of nearly all lenders suggests that it is used as a substitute for effective appraisal of the entrepreneur and project. Interestingly, while banks insist that they consider the viability of projects as the most important criterion in assessing applications, many small borrowers believe that their loan applications were rejected because of a lack of collateral. The foreclosure of collateral property is difficult in many African countries, in view of the ambiguities surrounding property rights. Thus, collateral requirement and restricted options for collateral assets and substitutes are likely to act as a credit rationing device, excluding many otherwise creditworthy small borrowers from formal credit.

As loan screening is costly, there is some evidence from our fieldwork to confirm the theoretical prediction that lenders are more likely to enter into repetitive games. In Nigeria banks tend to have a long-standing relationship with their large clients. For both commercial and merchant banks, there were far less first-time borrowers than repeat borrowers. The same situation was repeated in Ghana for large borrowers and in Malawi for all types of borrowers. Other forms of 'tests', such as the provision of a small initial loan, were rarely applied. Less than 10 per cent of bank managers in Ghana indicated they had provided initial advances to any type of borrower. This may be explained by the screening methods whereby greater emphasis is given to the quality of projects than borrower characteristics.

*Loan monitoring.* We found little evidence of extensive loan monitoring in our bank branch surveys in Ghana, Nigeria, and Tanzania.<sup>15</sup> Monitoring was more often conducted through accounts than projects. This failure of banks to make extensive project visits does not necessarily indicate a lack of concern about moral hazard. Rather, it was the result of pressures to cut costs. Also many banks in SSA, particularly government-owned banks, lack the transport equipment for regular project visits. In Malawi only, loan monitoring dominated the loan administration process, mainly because agricultural borrowers are usually large plantation owners and are within easy reach of urban bank branches.

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<sup>15</sup> In these three countries, commercial banks showed a greater likelihood of carrying out project visits than development or merchant banks.

### *Informal finance*

*Risk perceptions and loan screening.* Informal lenders generally contend that they do not attach different risks to borrowers within their usual clientele. In group-based arrangements, borrowers are pre-selected by membership requirements. Traders lend only to people with whom they have a trading relationship. Moneylenders are the only informal lenders that do not lend to distinct groups of clients. Given the lack of competitive pressure, moneylenders respond to possible risk variations by charging uniformly high-risk premium for all loans, rather than charging different interest rates to different borrowers. They rationalize their high rates as reflecting socially acceptable norms.

Screening in the informal sector relies extensively on personal knowledge of borrowers as suggested by Udry (1990, 1994) and Yotopoulos and Floro (1991). The development of personal ties and proximity are mechanisms for countering the effects of adverse selection and moral hazard. Such familiarity with a borrower reduces the significance of repeat borrowing, and a repetitive relationship only becomes important if the lender has no other means for verifying information about a borrower. The more rural the environment, the greater the need to personalize ties in confronting information asymmetry, as observed by Udry (1990, 1994) in Northern Nigeria where agricultural lending is, as a norm, conducted among relatives, acquaintances, and neighbours.

In general, more than two-thirds of successful applicants were personal acquaintances of lenders in individually-managed arrangements. Many West African moneylenders, who do not show a preference for repeat lending, attach a lot of importance to the recommendation of previous clients with information on the personal character of a new client rather than his/her indebtedness. West African savings collectors are often indifferent between repeat and first-time borrowers, as the key piece of information for them is whether cash flows are sufficient to make daily deposits possible.

While interlinked credit markets are often seen as a major aspect of informal credit transactions in developing countries (Yotopoulos and Floro 1991; Bardhan 1989)), we found few in our sample. This is consistent with the observation made about production relations in semi-arid Africa: that the tied market relations are limited and inefficient as a collateral substitute (Binswanger et.al 1989). Most moneylenders in Ghana and Nigeria did not require a business relationship with applicants for loan approval. The largest incidence of interlinked transactions was observed in Tanzania where linking credit to land titles effectively became a way of buying land in a system where land sales were not possible. In Malawi, interlinked transactions are observed between estate owners and labourers/ tenants in tobacco plantations.

In group-based arrangements such as Rotating Saving and Credit Associations (ROSCAs) or non-rotating Savings and Credit Associations (SCAs), where only members received loans, all borrowers are known. Effectively, they do not screen loans but screen membership based on the applicant's character, trustworthiness, and commitment to the group's goals. In general, the methods of client selection used by informal lenders and groups effectively reduce the risk of dealing with small borrowers. Thus, their clientele-borrowers may be thought of as low-risk, even though they would be perceived as high-risk by formal lenders.

*Loan monitoring.* It is often suggested that the opportunity for frequent and easy loan monitoring is one way by which informal lenders are able to reduce the incidence of

default (Yotopoulos and Floro 1991). Contrary to this notion, we observed little attempt by informal lenders to monitor the use of loans explicitly. Our evidence supports Udry's (1990) position that informal lenders have little need to monitor loans explicitly because of free information flow in their operating circles.

In Tanzania, only two of the 19 Savings and Credit Societies (SCS) reported any form of loan monitoring. For West African savings collectors, loan monitoring is taken for granted as daily visits to clients for deposit collection ensures that loans are monitored. Moneylenders in Ghana and Nigeria and other informal groups in most countries indicated that they did not bother with monitoring. The situation is different only for estate owners in Malawi who provide loans as part of interlinked market arrangements that require regular interaction between lender and borrower.

### **3.2 Loan repayment and contract enforcement**

#### *Formal finance*

*Loan repayment trends* vary considerably across bank types.<sup>16</sup> Some of the most disappointing bank loan repayment records were in Tanzania where poor contract enforcement characterizes the whole banking system and there was a serious deterioration in banks' loan portfolios in the adjustment period.<sup>17</sup> The proportion of non-performing loans for commercial banks in Tanzania was between 80 and 86 per cent (Bagachwa 1996).

In Nigeria, both publicly-owned banks and private banks are under considerable stress. Given the proliferation of financial institutions following imprudent and premature deregulation, the problems of moral hazard and adverse selection have loomed large. In 1992, 45 per cent of the total outstanding loans of the banking system were classified as non-performing. Among the distressed banks that are technically insolvent but continue to operate, 67 to 77 per cent of outstanding loans have been non-performing in recent years. These statistics do not cover non-performing loans of the development finance institutions (DFIs), which are believed to have non-performing loans amounting to at least 80 to 90 per cent of total loans. Some of the worst performances were observed in rural lending by large commercial banks and merchant banks.

In Ghana, formal sector default rates are not low, but there was more variation by borrower type and location than in Nigeria and Tanzania. Small agricultural loans accounted for over 55 per cent of delinquency in the period from 1988 to 1990. Actual defaults among them were most pronounced in development bank branches and the unit

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<sup>16</sup> Deschamps and Bonnardeaux (1997) estimate that for SSA non-performing loans represented at times 50 per cent or more of total loans outstanding in the mid-1980s.

<sup>17</sup> An analysis of the loan portfolio at the National Bank for Commerce (NBC) showed that about 94 per cent was sub-standard, doubtful, or rated as loss by end-December 1991 (Eriksson 1993). NBC, drawing on central bank facilities, had continuously extended loans and credit to its major parastatal clientele far in excess of deposits mobilized. The Cooperative and Rural Development Bank (CRDB) also suffered from high delinquency and default rates on loans and overdraft facilities as its main borrowers were the cooperative unions. In all these cases, from the onset there was little prospect of repayment. Yet the banks continued to provide loans using implicit government guarantees.

rural banks. Although small loans tend to default more than large loans in numerical terms, large loans accounted for 55 per cent of loan amounts in default by the end of 1991. Amounts in default by small agricultural borrowers accounted for 25 per cent.

In Malawi, poor repayment rates for small borrowers were also observed, but the scale of the problem was much more contained. Furthermore, delinquency, rather than actual default, was more of a problem as most delinquent loans tended to be paid within 12 months of becoming overdue. Delinquency among small enterprise borrowers stood at 16 per cent for the same period. Interestingly, only 5 per cent of agricultural loans were either delinquent or in default, a figure comparable to the 2 per cent for large enterprises. The low default rates for agriculture may be due to the fact that in Malawi these loans are directed at large plantation owners.

*Contract enforcement.* Under conditions of low repayment, one would expect contract enforcement to play a significant role in loan administration. However, despite a relatively large incidence of default, foreclosure of collateral or legal action was rarely observed in our case-study countries. With no legal institutions to enforce contracts effectively and the absence of bankruptcy laws and procedures, the attitude of banks to contract enforcement is subtle. The first line of action is to persuade delinquent borrowers to resume their payments. Most Ghanaian bankers indicated that delinquency and default tended not to be wilful, but instead due to poor returns on investments, particularly because of bad management of small enterprise projects.<sup>18</sup> About 85 per cent of bank managers interviewed in Ghana indicated that they often re-finance projects to revive distressed borrowers. However, these banks do not have access to sufficient information to arrange state-contingent loan contracts for borrowers who do not default wilfully. Nor are there many effective mechanisms available to banks to enforce wilfully defaulted borrowers.

### *Informal finance*

*Loan repayment.* Our surveys confirm the view that delinquency and default rates in the informal sector are relatively low (Udry 1990, 1994). In Ghana between 70 and 80 per cent of our entire sample of informal lenders reported that they had no delinquent borrowers in 1990 and 1991. Among those who had, they usually represented less than 5 per cent. The largest proportion of defaulting borrowers was observed in rural credit unions and co-operatives with hundreds of members, where defaulters averaged 30 per cent of borrowers. While Malawian and Tanzanian default rates were also low, slightly higher delinquency rates were observed in Nigeria. There, 14 per cent of borrowers with moneylenders were delinquent; as were 17 per cent with SCAs and 20 per cent with *esusu* collector borrowers. As in other countries, all lenders believed that delinquent borrowers would repay within three months of the loan maturing. Default rates in rural Nigeria were significantly lower than those in urban Nigeria, which is in accordance with Udry's (1990) findings.

In rural areas, non-payment is generally attributed to borrowers' cash flow problems while many urban lenders think it is a mixture of cash flow problems and low

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<sup>18</sup> This contrasts with the Nigerian case, where quite a number of bankers believe that some default is wilful and where collusion between borrowers and some bank officials is observed.

commitment on the part of borrowers to settle debts. Cross-tabulating perceptions on the causes of default to loan end-use suggests, however, that lenders providing loans for consumption purposes and trading tend to be more concerned with strategic default than those lending to farmers. The latter are more concerned about failed projects, arising out of random production and income shocks, leading to default. Within local communities where the free flow of information is guaranteed, loan contracts could be structured as state-contingent contracting without a fear of moral hazard. Udry (1990, 1994) reports that in the villages of Northern Nigeria such state-contingent contracting is used as a risk-pooling mechanism against idiosyncratic shocks within the village. Under such arrangements, realized interest rates and repayment periods are adjusted for households who have experienced adverse shocks. Needless to say, however, such arrangements can not be used against village-wide systemic shocks.

*Contract enforcement.* While repayment trends in the semi-formal and informal sectors are much better, it is seldom the result of more 'aggressive' contract enforcement procedures, as suggested by Shipton (1991). We found little evidence of litigation. To start with, informal lenders effectively screen out 'costly' borrowers in the case of non-payment. Once delinquency becomes an issue, they apply the most effective but least costly enforcement mechanisms at hand case by case. Hence, contract enforcement mechanisms vary significantly depending on lender-borrower relationships. Effective tools are often embedded in the personalized relationships through the extended family, friendship, and other social relationships. Among group-based arrangements and in rural areas, mechanisms such as peer pressure or a potential use of social stigmatization are effective. Udry (1990) reports the case where an appeal to community authorities by a lender in response to a perceived default results in a prompt repayment. Ironically, when the number of defaulters in a rural co-operative arrangement is large, the sanction of stigmatizing an individual fails to be effective. Where lenders cannot depend on moral suasion alone, they apply other mechanisms.

In Tanzania, the use of interlinked transactions enables an expansion of the control variables to influence the borrower's actions (Bagachwa 1995). An interlinked transaction can thus be treated as a disguised form of collateral.<sup>19</sup> Granting usufruct rights to lenders, such as tree pledging, is also common among cocoa farmers in western Africa (Adegboye 1969). In the absence of these mechanisms, collateral assumes a greater role in risk management. Thus, more Ghanaian lenders than their Tanzanian counterparts demanded collateral in the form of physical assets such as buildings, farmland, and undeveloped land or non-physical securities such as guarantees from friends, relations, or employers. About 83 per cent of Ghanaian moneylenders and 76 per cent of credit unions require security against loans.

Although informal lenders do not generally resort to foreclosure on collateral or expensive legal actions, they do hold onto collateral to guarantee eventual repayment. It is certainly easier for a cocoa farmer to hold on to a confiscated cocoa farm indefinitely

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<sup>19</sup> Land-based credit market interlinkages are popular in Tanzania because these are the simplest way of acquiring the usufructuary rights to land. This situation gives rise to a lending game in which borrowers' defaults are favourable for the lender as his utility is enhanced. However, Udry (1990) reports that the use of collateral and interlinked contracts is absent within rural communities in Northern Nigeria where information asymmetries are unimportant. This is the case despite the fact that each of the sample villages has active land sales markets and land is available to serve as a collateral asset.

than for a bank. Banks are not able to seize collateral as storage or maintenance costs can be prohibitive. Hence, borrowers would not treat the threat of collateral confiscation by an informal lender as lightly as for a formal lender, and this could affect their attitudes to repayment between the two sectors.

#### **4 Estimates of transaction costs**

While the costs of acquiring information affect the choice of risk management methods, the transaction costs are determined by both the method and the effectiveness of risk management applied. The transaction costs of lending are the sum of the costs of administering credit (loan screening, monitoring, and contract enforcement) and the costs of the risk of default, defined as ‘those expenses for the risk of loan default incurred by the lending institutions, for example, provision for loan losses, the loan guarantee fees paid, and the actual bad debts incurred’ (Saito and Villanueva 1981). In this section, we relate risk management practices to transaction costs.

##### **Formal finance**

Although most banks base cost calculations on their standard overhead costs, we measured transaction costs for each type of lender, separately for administrative costs and default risk costs.<sup>20</sup> Our analysis shows that the cost structure reflects the relative importance attached to the different components of risk management.

In Ghana, commercial banks concentrate more on screening expenditure.<sup>21</sup> An exception to this is the administration of small agricultural loans, for which all banks allocated an average 40 per cent of the resources for monitoring loans, more than double that for other types of loans. In contrast, Nigerian banks spend less on screening (15 per cent of loan administration costs) but find themselves incurring higher costs on loan monitoring and contract enforcement. This may be attributed to a more pervasive fear of moral hazard and wilful default in Nigeria. The marginal cost for administering each loan is as indicated in Table 1.

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<sup>20</sup> See Nisanke and Aryeetey (1998) for our estimates of the breakdown of these costs for Ghana and Nigeria, and discussions of trends in Malawi and Tanzania, which are based on perceptions of bank staff and research associates. See Aryeetey (1994) for a detailed description of methodology used in our estimates.

<sup>21</sup> Many commercial banks in Ghana insisted on a more thorough screening process. This resulted in relatively low default rates and less enforcement costs. This, however, has led to relatively fewer loan approvals by commercial banks, indicating their high risk aversion.

Table 1: Loan administration costs as a percentage (%) of loan amount

Country	Type of enterprise/applicant			
	Small scale enterprises	Large scale enterprises	Small scale agriculture	Others
Ghana	1.7	0.2	3.5	1.4
Malawi*	3.4	17.6	8.9	13.5
Nigeria	12.9	18.9	12.3	11.4
Tanzania**	12.4	--	--	--

Source: Nissanke and Aryeetey (1998).

\* Based only on staff time allocations. \*\* Not broken down by sector.

Table 2: Transaction costs of lending in Ghana as a proportion of total loan amount for sector by type of bank

Bank type	Type of enterprise/applicant			
	Small scale enterprises	Large scale enterprises	Small scale agriculture	Others
Commercial bank	3.2	1.8	6.4	4.1
Development bank	8.7	8.0	10.6	8.2
Unit rural bank	5.8	--	3.9	3.0
Overall	5.9	4.9	6.9	5.1

Source: Nissanke and Aryeetey (1998).

While many small borrowers are already excluded from the sample because of screening, our survey data does not validate the popular assertion that small loans cost more to transact than larger ones. The overall administration costs are also correlated with the degree of centralization of decision-making, as greater centralization increases screening costs. For example, the cost differential between small enterprises and large ones in Malawi is related to the degree of centralization of decision-making between the two types of loans, as the amounts sought by small enterprises fall within the lending limits of branch managers. Much higher costs incurred by Nigerian banks across different borrower types are also attributable to more centralized decision-making, larger overheads, and larger branch networks than their Ghanaian counterparts. The high loan administration costs for the small enterprise sector in Nigeria also reflect the greater engagement by merchant banks in this type of lending.

For Ghana, where we obtained estimates on default risk costs, total transactions costs were measured as in Table 2.<sup>22</sup>

<sup>22</sup> While we expect transaction costs in Nigeria and Tanzania to be much higher than those for Ghana, Malawian transaction costs should not be very different.

For all types of borrowers, the transaction costs were highest for development banks, where loan administration costs per branch were lowest. Clearly, their administration methods put a premium on default risk, as it was their high provisions for bad debts that increased their transaction costs. Significant over-estimations of default risks are common for other banks too. Our estimates of the average transaction costs for small enterprise lending and small agricultural loans are comparable to those incurred by development banks in the Philippines, reported in Saito and Villanueva (1981). The major difference arises for large enterprises: our estimate of 4.9 per cent for this category is more than twice their average of 2.1 per cent.

Further, it is worth noting that transaction costs in the range of 5 to 7 per cent would account for less than a half of interest rate spreads in Ghana. Thus, the high and increasing spreads observed in the adjustment period cannot be totally explained by high transaction costs, and may instead reflect a lack of competition among banks. However, high spreads in the other countries may be more closely related to high transaction costs, on account of their higher administration costs (Table 1). The high transaction cost of arranging loans also explains why banks prefer roll-over overdraft facilities with low cost-risk configuration, or investing in low-risk and high-return government papers and bank bills.

### Informal finance

The transaction costs of informal lenders are much lower than those incurred by formal ones (Table 3).<sup>23</sup> Most costs are incurred in the screening process, which dominates their risk management. Their screening costs are low because they rely extensively on a pre-selection of clients. Any attempt to break out of their traditional segment will require new operating principles and additional information-gathering costs. This explains why all informal lenders behave as moneylenders when they lend to non-members: a new risk is introduced, for which a premium has to be charged.

Table 3: Mean loan administration cost 1992 (% of loan amount)

Country	Moneylender		Savings collector		Savings and credit association/ co-operative		Credit union	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
Ghana	1.8	2.7	0.9	0.6	0.3	0.3	2.6	4.4
Malawi	0.6	0.6	--	--	0.2	0.2	0.4	0.1
Nigeria	3.2	2.7	0.6	0.6	1.0	0.6	1.9	0.6
Tanzania	1.7	2.6	--	--	0.1	0.1	2.5	3.0

Source: Nissanke and Aryeetey (1998).

<sup>23</sup> The estimates shown in Table 3 cover only loan administration costs, not default risk costs. However, the latter should be low in view of low default rates for informal lenders. See Nissanke and Aryeetey (1998) for the detailed breakdown of loan administration costs.

In general, costs increase as the operations of informal entities become more formal. Thus, the cost of more formal credit unions in Accra was on average twice that of co-operatives. It is hard, however, to attribute the phenomenal differences in interest rates charged across informal lenders to the differences in loan administration cost shown here. The ability of some commercial informal lenders to extract a monopoly rent is confirmed by our survey data. For example, the mean monthly interest rates charged by money lenders are 10 per cent, 19 per cent, 8 per cent and 48 per cent in Ghana, Nigeria, Tanzania, and Malawi respectively. Naturally, the share of monopoly rent in the interest rates is a function of the degree of competition prevailing in a particular market.<sup>24</sup> Furthermore, an analysis of interest rates charged by commercial informal lenders must allow compensation for transaction costs, risk premiums, and the opportunity costs of funds, as well as monopoly rents or profits (Bottomley 1975).

For a more accurate picture on this question it is necessary to estimate the cost of funds. This requires data on interest payments on deposits and their handling costs, returns on alternative investments (the opportunity costs of lending), and interest payments on loans taken for lending. Although we have only limited data from Ghana and Malawi on some of these parameters, a number of general points can be made. First, the lack of access that informal units have to banks for on-lending means that there are few borrowed funds involved. Second, for most informal units, deposit mobilization incurs insignificant costs. For example, saving collectors who receive payment for taking deposits may have a negative cost of funds.<sup>25</sup> For a typical one month loan from an *esusu* collector in Accra, the total transaction cost was equivalent to -5.3 per cent of loan amount. Considering the monthly lending rate of 3.3 per cent, there is a substantially large spread of more than 8 percentage points.<sup>26</sup>

The opportunity cost of funds can also be fairly low, depending on where lenders would have invested otherwise. For ROSCA members, low opportunity costs can be inferred by the fact that their operations remain sustainable, even though no interest is paid on the funds deposited by members. The opportunity cost of funds for moneylenders may also be low, as they are known to lend out 'temporarily idle' funds over the very short term. Their loan default risks are effectively contained and the costs involved are not high.

Given these preliminary observations, the high interest rates charged by moneylenders are difficult to justify in terms of the high rates of default, the high correlation among defaults, and the high cost of screening loan applicants and pursuing delinquent borrowers (as suggested by Aleem (1990) in relation to a rural credit market in

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<sup>24</sup> In the case of interlinked credit transactions, the contestability of linked markets should be taken into account.

<sup>25</sup> They only earn interest on their deposits (mainly demand deposits) with the bank if their balances exceed ₵1 million continuously for half of the year, which means that there is usually no interest foregone. Aryeetey and Steel (1992) measured the cost of funds as the implicit daily interest rate on fixed deposits accumulated over 30 days, or -0.2 per cent, representing the collectors' fee. This was equivalent to -6.3 per cent of average loan amount per month or -54.4 per cent per annum.

<sup>26</sup> For the other informal lenders in Ghana, the cost of funds was usually between 0 and 0.1 per cent, thus also giving them substantial spreads. In Malawi as well, the cost of funds for all informal lenders was estimated to be insignificant.

Pakistan). In the countries studied here, the high returns realized by moneylenders could be interpreted as monopoly profit from operating in incomplete, uncompetitive markets. While it is admittedly hazardous to compare interest rates on informal credit because of the highly heterogeneous nature of loan products,<sup>27</sup> wide differential returns across different segments of the informal market cannot be justified by risk differentials or cost differentials alone.

## **5 Summary and conclusion: market structure and institutional constraints for market transformation**

Our discussion shows that the demarcation of the boundaries of specialization is determined by each lender's attempts to mitigate the problems caused by information asymmetry and to contain risks and transaction costs. Both formal and informal lenders largely pre-select clients on the basis of the availability of information and the means of managing risks. Each market segment thus formed serves distinct socio-economic groups with structurally differentiated financial products.

This condition is related to a variety of institutional constraints. The internal shortcomings of the formal financial sector, such as inadequate supervisory and regulatory provisions, are compounded by poor legal mechanisms for contract enforcement, inappropriate incentive environments, and restricted flows of information, the combination of which increases the riskiness of lending. Each lender's preference for a particular risk management method is shaped in this institutional environment, while attempts to confront the increased riskiness have differential impacts on transaction costs. Faced with various institutional constraints, the range of clientele served by each lender is both narrow and polarized at the extreme market-ends.

For example, the cost of acquiring reliable information on idiosyncratic risks of potential borrowers is prohibitive for formal institutions. Hence, the type of information sought by, and available to, banks about small borrowers during the screening process is less reliable and qualitatively different from that collected by informal lenders. Hence, banks are forced to devote relatively more resources to monitoring and contract enforcement than informal lenders or groups. Despite these efforts and resources expended, banks' loan repayment rates continue to be poorer, and hence banks have to absorb high default-risk costs into their transaction costs.

In contrast, informal financial market segments have long-developed devices and mechanisms for coping with agency problems within geographically and socially confined community settings. These mechanisms used by heterogeneous informal associations and agents are firmly rooted in indigenous social codes and norms. They are anchored in institutional set-ups tested over many decades, if not centuries.

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<sup>27</sup> For example, Basu (1989) argues that in rural credit markets, where open discrimination among borrowers within a community is not in accord with social norms, the interest rate structure becomes a choice variable of the lender. Interest variation in relation to the duration, size, and purpose of loans between borrowers could serve as a subtle system of price discrimination in lenders' risk management.

Indeed, informal units enjoy considerable advantages in information and transaction costs when they deal with their traditional clientele. They possess a competitive edge in risk management and transaction costs in small credit provision within local networks as well as in small and short-term savings mobilization, which are difficult for formal institutions to tap for reasons of size-sensitive costs.

This condition points to the potential in exploiting the comparative advantages of the informal financial sector to promote financial sector development. We have argued in Nissanke and Aryeetey (1998) that the capacity of financial systems could be enhanced if integrative mechanisms between formal and informal segments are developed that can reduce operational constraints facing each sector, and at the same time capitalize on the comparative advantages conferred by each sector. Even though markets incorporate both formal and informal segments, a financial system could perform its function more efficiently if the potential benefits from specialization of each sector could be properly exploited. Such integrative mechanisms could facilitate ‘crowding-in’ synergy effects between informal and formal financial institutions, as Conning and Udry (2005) also suggest. For this potential to be realized there should be dynamic and operative interactions between the segments through overlapping players, and market signals should be transmitted across the sectors.<sup>28</sup> For example, in a number of Asian countries a heterogeneous and dynamic informal financial sector has continued to exist as part of the financial systems. Yet in these economies, market integration has taken place and the intermediation efficiency of the system as a whole has increased over time, as specialization in financial services by each sector has progressed (Biggs 1991; Ghate 1990).<sup>29</sup>

Referring to some Asian economies where a continuum or a semblance of an integrated financial system is observed, Ghate (1988) suggests that:

the two sectors are substitutes over a range of credit needs that occupy the middle range of a spectrum of credit markets and purposes. Within this range they impinge on each other’s share of the market, depending on lending and borrowing rates in each sector. At both ends of the spectrum, however, each occupies a number of markets which can not be served by the other and which are therefore complementary. (Ghate 1988: 75)

In short, the integrated financial system has a ‘captive’ segment and a ‘contested’ segment.

It can be argued that the financial system as a whole becomes more competitive if the range of demand, non-exclusive to one sector (that is the contested segment), expands. In the presence of overlapping demand, there are also spillover effects from the formal to the informal segments. For example, Bell (1990) shows that when informal lenders act as intermediaries for formal institutions, the resulting lower cost of funds to informal lenders will be passed on to borrowers, depending on the degree of competition in the

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<sup>28</sup> See Jain (1999) for discussion on formal-informal sector interaction in an adverse selection setting.

<sup>29</sup> See Nissanke (1998) for more detailed discussion on comparison of market structure in Asia and Africa.

informal market. Thus, where demand is non-exclusive, that is, overlapping, direct credit links can have a positive effect on the efficiency of financial systems.

In SSA, there have been few functional linkages between and within different market segments. To start with, direct institutional linkages are insignificant. While there are direct deposit links between banks and some informal agents/associations, savings of informal agents are kept in non-interest bearing demand deposits for safe-keeping, and, as such, are seldom intermediated for investment due to conservative asset management on the part of banks (Nissanke and Aryeetey 1998; Aryeetey and Steel 1992). There are few direct linkages in credit allocation between banks and traditional informal operators.

Indirect links among different market segments are also weak with the extremely narrow range of overlapping demand for financial services. Neither complementarity nor competition are generally observed in financial market relationships. De-facto financial intermediation, which involves on-lending by large enterprises to smaller sub-contractors, has not been observed on the scale found in some Asian countries, partly as a result of the limited scope for backward and forward linkages in real sector activities in SSA. Nor has an extensive 'credit layering' of wholesale and retail provision of services been reported.

Overall, flows of funds and information are insignificant between segments and access by clients to financial products is extremely limited with little substitution and overlapping demand. Under such prevailing conditions, formal and informal sectors often form almost discrete financial enclaves. With few linkages among segments, the scope for information-sharing or risk-pooling/sharing has been limited. Informational advantages possessed by informal agents have not been effectively capitalized on as a means for achieving a more efficient system of financial intermediation.

A specific market structure has emerged in which institutional arrangements have become barriers for interaction across segments. Markets are characterized by an extreme degree of fragmentation, which gives agents in each segment the opportunity to exploit market power. In fragmented markets, risk-adjusted returns are not comparable across segments. Cost variations observed among different types of lenders cannot account for the large differences in loan prices. Interest rates diverge significantly across and within segments, reflecting the severity of market fragmentation. As the range of the captive segment far exceeds that of the contested segment, structural characteristics of these potentially monopolistic competitive markets are skewed towards imperfect competition.

Severely constrained by institutional conditions, financial units specialize in a very narrow range of products. This has led to a situation where, not only do financial markets become too fragmented to allow risk-adjusted returns to converge, but considerable gaps in financial services have emerged. The financing gaps absorb all those potential borrowers that either fail to meet the lending criteria of various existing

lenders, or find their products unattractive. They are either too large for informal lenders or too small for formal lenders.<sup>30</sup>

With the fundamental problems faced by formal and informal institutions/agents unresolved each segment continues to struggle with its respective operational constraints. On the one hand, despite the flexibility and adaptability shown by some informal financial arrangements, the characteristics of informal agents/groups are such that the growth of operations *within* the informal sector is severely limited in SSA.

In effect, informal financial units operate continuously as personalized transactions, largely in a repeated-game framework. Their heavy reliance on localized, personal information often prevents them from transforming into full-scale intermediaries. Their risk management is valid as self-reinforcing contracts within a limited community/local setting. It relies extensively on traditional social institutions and mechanisms which are based on the village and kin groups for informal insurance arrangements. While these have provided informal social safety nets and redistributive mechanisms, local lenders are granted the opportunity of using their privileged personalized information about the borrower as an entry barrier to the local credit market. This has injected a more monopolistic element into market structure.

On the other hand, formal institutions implanted externally in the colonial period or created by governments at independence do not have a firm anchor in indigenous social institutions. African states are often regarded to be operating with 'soft state' institutions (Platteau 1996). The formal legal systems and the concepts of private property rights are seen as 'foreign' to many local settings, and hence lack support and legitimacy in local culture and social norms.<sup>31</sup> In the absence of functional institutions to support their operations, banks suffer from a legacy of either conservatism or financial distress, characterized by high transaction costs and severe loan recovery problems. This is despite their potential advantage in exploiting economies of scale in portfolio management and diversification to allow spatial risk-pooling and maturity transformation.

As outside agencies, formal financial institutions do not have access to local information about the borrower. Consequently, their methods of loan screening and monitoring are costly and imperfect. Therefore, using collateral requirements as a credit rationing device for small borrowers, they concentrate their loan portfolio on larger formal (often public) enterprises. The performance of these enterprises is not necessarily rigorously screened and monitored. With the weak formal systems of contract enforcement, implicit government guarantees against the failure of large formal institutions can ultimately be used as a last resort. In SSA, such guarantees have to be largely underwritten by foreign aid. This condition could engender and perpetuate a culture of 'aid dependency'.

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<sup>30</sup> See Nisanke (1998) for the implication of this gap in financial services for real sector development and diversification in SSA.

<sup>31</sup> Transaction costs associated with monitoring and enforcement could be lowered if exercising social and moral norms would lead to a reduction of opportunistic behaviour (Vandenberg 1999).

Thus, the institutional environment prevailing in SSA is not yet fully capable of supporting transactions taking place beyond local communities. This condition has led many researchers to conclude that African economies appear to be locked into the low developmental stage where ‘a dense social network leads to the development of fairly stable informal structures, such as customs, trust and normative rules which give an informal institutional framework for organizing activities’ (Aron 1997). One of the critical questions to be addressed in relation to African economic development is to create institutional conditions where private agents operating in informal arrangements feel prepared to transform into more formal units conducive to productive activities promising higher social and private returns. For this to happen, however, the institutional environment would need to undergo fundamental structural transformation in order to underpin market transformation on a sustainable basis.

In Niskanen and Aryeetey (1998), we spelt out some institutional measures to accelerate the process of integration of hitherto fragmented informal and formal market segments. We emphasized the possibility of financial sector development, building on the strengths of informal institutions in SSA. Here it may suffice to note that, broadly speaking, institutional measures for financial market transformation should directly address the informational problems and the incentive (agency) problem, and the contract enforcement problems (Hoff and Stiglitz 1990; Conning and Udry 2005). These should therefore encompass measures aimed at: strengthening legal systems related to property rights safeguards and contract enforcement; accumulating information capital; improving the governance/incentive structure; and intensifying market network development.<sup>32</sup> Special attention should also be paid to ‘institution innovation’ aimed at overcoming extreme market fragmentation through effective integration measures.

Institutions, which define and limit the set of choices facing agents by providing the incentive structure, comprise formal rules, informal constraints, and the effectiveness of their enforcement (North 1990). Hence, institutional change is a multi-faceted and complex process, involving changes in perceptions, preferences, organizational forms, and agents’ behavioural patterns through the society investing in acquiring knowledge, co-ordination, and ‘learning by doing’ skills (North 1990 and 1997). These cannot be effected over the short-term. However, governments could play a positive role in expediting the transformation process by understanding that the changes in formal rules governing enforcement mechanisms have to be complemented and supported by incremental changes in informal constraints and ideological constructs to restructure human interactions and develop new conventions and norms.

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<sup>32</sup> North (1997) lists four major variables as a means of providing low-cost transacting and credible commitment, which are regarded in turn as the institutional requirements for creating efficient factor and product markets. They are: (1) an efficient system of property rights that reduces the cost of measuring contract performance; (2) an increased market size supported by mechanisms for constraining opportunistic behaviour; (3) credible enforcement mechanisms through improved legal systems and impartial adjudication; and (4) ideological attitudes and perceptions to reduce the cost of the measurement and enforcement of contract performances.

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