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Informal and Formal Microfinance in Urban Sub-Saharan African Markets: The Case of Micro-Entrepreneurs in Ouagadougou, Burkina Faso

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9.1 Introduction

In spite of the rise of a dynamic microfinance sector with the objective of redressing the problem of financial exclusion, informal financial mechanisms remain pervasive in developing countries (Emily, 2002; Collins, Morduch, Rutherford, and Ruthven, 2009). This seems puzzling, given that mainstream economics has long attributed the use of informal financial mechanisms to the lack of access to formal financial markets. Institutional microfinance has naturally been viewed as a potential substitute for informal finance. However, the persistence of informal finance even when microfinance is available, suggests that it is not being treated as a substitute.

Such an unexpected outcome, has led a number of scholars to investigate the reasons for the continued prevalence of informal financial mechanisms. There are two categories of reasons put forward in the literature. Some scholars view informal finance as a *solution of last resort* for individuals who lack access to formal financial (credit) markets. They draw their arguments essentially from the information asymmetry theory (Stiglitz and Weiss, 1981) and the financial repression theory (McKinnon,1973; Shaw, 1973). These theories show respectively how endogenous and exogenous market failures restrict access to credit markets, compelling some people to resort to informal finance. Information asymmetry refers to situations where lenders who cannot determine the risk profiles of their potential borrowers face two risks: the adverse

selection risk and the moral hazard risk. The *adverse selection* risk refers to the ex-ante probability of selecting risky borrowers (i.e. borrowers with a relatively high probability of default) due to the presence of information asymmetries. The *moral hazard* risk refers to the ex-post risk of default, and arises from the difficulty of monitoring the borrower once the loan is granted. Due to these problems, lenders are likely to ration credit so as to avoid losing money in case of default. Thus, the individuals who are weeded out of the formal markets have no other option but to resort to informal finance (Hoff and Stiglitz, 1990; 1993). Moreover, the credit rationing resulting from information asymmetry is likely to be wealth biased (Boucher and Guirkinger, 2007). Indeed, one way of mitigating the problem arising from adverse selection and moral hazard is to offer collateralized loan contracts. However, this would mean that low-income borrowers without sufficient wealth to put up as collateral would not be offered any feasible loan contract. Similarly, lenders who are unable to determine the risk profiles of their potential borrowers tend to associate poverty with high risk and tend to offer loan contracts only to rich borrowers.

According to the financial repression theory, informal finance is believed to result from government intervention in financial markets through a set of regulations and restrictions which are prone to discourage savings while reducing the supply of credit by formal institutions.[1] Thus, some individuals are prevented from accessing formal credit, even though without these restrictions they would qualify for obtaining it. The resulting unsatisfied demand for loans is absorbed by the unorganized informal money market, which acts as a residual market allowing financial markets to clear (Van Wijnbergen, 1983).

Another set of theories suggests that the use of informal finance is a deliberate choice by individuals who are better off in informal finance than in formal finance. There are two theoretical arguments supporting this view: the argument in terms of transactions costs (Chung, 1995; Barham, Boucher, and Carter, 1996) and the argument in terms of contractual risks (Boucher and Guirkinger, 2007; Boucher, Carter, and Guirkinger, 2008; Guirkinger, 2008). The argument in terms of transactions costs posits that informal financial contracts are sometimes cheaper than formal financial contracts, or alternatively, that low-income individuals who require small transactions that are not profitable for formal institutions—due to the implied transactions costs—find it easier to resort to informal finance. The argument in terms of contractual risks emphasizes the risk for a borrower contracting a collateralized loan. As mentioned previously, collateral requirements aim at protecting

[1] Instruments of financial repression include policies such as ceilings on interest rates, high liquidity ratio requirements, high bank reserve requirements, capital controls, credit controls, and restrictions on market entry.

lenders against the risk of default. Unfortunately, they involve risks for the borrowers who are likely to lose ownership of part or all of their assets pledged as collateral in case of default. Comparing the formal and the informal credit markets, it appears that this risk is higher in formal markets than in informal markets (Boucher and Guirkinger, 2007).

The literature cited above provides an interesting basis for analysing the persistence of the demand for informal finance, and thereby the reasons for the coexistence of informal and formal finance. However, little is said about how informal and formal financial financing coexist. Do they simply exist side by side, serving different types of customers? What about their substitutability? Are there people who use a combination of both types of finance? Moreover, the above literature focuses on the credit market but does not provide any insight into the savings behaviour of low-income individuals. We endeavour to help fill this gap through an empirical analysis of the financial behaviour of micro-entrepreneurs operating in Ouagadougou. Specifically, our analysis intends: (i) to assess the use of both informal and formal finance, (ii) to identify the financial mechanisms that are the most likely to be combined, (iii) to analyse the profile of micro-entrepreneurs who are most likely to combine the use of both informal and formal finance and, (iv) to check whether informal and formal finance are used for similar or different purposes. However, before dealing with these issues, we first briefly describe our empirical methodology as well as the characteristics of our sample.

9.2 Data and Empirical Methodology

The results discussed in this chapter were obtained from a survey of micro-entrepreneurs operating in three urban markets—the Nabi Yaar, the Rood Woko, and the Dasasgho markets—located in and around the centre of Ouagadougou, the capital of Burkina Faso. The survey was executed in two stages from mid-2009 to mid-2010. During the preliminary stage, conducted in 2009, a pilot survey was carried out on a small sample of thirty-two individuals using qualitative approaches that consisted of in-depth, face-to-face, semi-open interviews. The information collected during this phase was built up progressively until data saturation was reached.[2] Drawing from the information collected during the pilot survey, a comprehensive quantitative survey was designed and implemented in the first quarter of 2010. This survey involved structured, face-to-face interviews with a random sample of 398 micro-entrepreneurs. Note that our sampling unit, the micro-entrepreneur,

[2] 'Data saturation point' is reached when the interviews of extra respondents do not provide the researcher with any extra (new) information (Siniscalco and Auriat, 2005).

Table 9.1 Summary statistics of the micro-entrepreneurs' characteristics

Variables		N	Prop. (%)	Mean
Age of the respondent		396		38.64
				–12.63
Household size		392		7.75
				–5.08
Monthly income (in local currency: XOF)		386		167,375
				–197,528
Education of the respondent	None		41	
	Primary		28	
	Secondary		17	
	Koranic		14	
Gender	Woman		53	
	Man		47	
Type of activity	Local arts dealers		5	
	Vendors of shoes		6	
	Vendors of vegetables and food stuffs		10	
	Vendors of condiments		28	
	Vendors of clothes, cosmetics, and manufactured products		50	
Ethnicity	Mossi		84	
	Other		16	
Religion	Muslim		83	
	Catholic		15	
	Protestant		2	

Note: The abbreviations Prop and SE stand respectively for Proportion and Standard Error. Standard deviations from the mean are indicated between blankets.

is also our unit of analysis. Four enumerators were hired and trained to assist in implementing the survey. Finally, simple multivariate data-mining techniques, namely correspondence analysis and cluster analysis, were used to explore our dataset, while logit models were used to estimate the effects of micro-entrepreneurs' characteristics on their financial choices. The results discussed below are mainly based on these techniques. Table 9.1 presents a brief overview of the sample's characteristics.

It appears from the above table that the surveyed micro-entrepreneurs are not among the poorest. Their average monthly income of XOF 167,375 (or ≅ €255) is more than twice the average national household expenditure (XOF 72,198, or ≅ €110).[3] Moreover, the average micro-entrepreneur earns more than what is defined by the World Bank as the international poverty line of $1.25 a day

[3] XOF stands for West African CFA franc. The National Institute of Statistics (INSD, 2008) reports average annual household expenditures of about XOF 866,381 (which is approximately XOF 72,198 per month) for the year 2003, which is the latest year for which data were available. The exchange rate is XOF 655.9570 = €1. (For euro foreign exchange reference rates, see <http://www.ecb.int/stats/exchange/eurofxref/html/index.en.html>, accessed 18 May 2013).

(Shaohua and Ravallion, 2010). Indeed, considering an average household size of 7.75 individuals, the average per capita daily income of a micro-entrepreneur's household is about XOF 720 (≅ PPP $3.4).[4] Nevertheless, it should be noted that there are income disparities between micro-entrepreneurs, as some of them have a monthly income that can be as low as 6,000 XOF (or ≅ €10). Moreover, men earn more than women, the average income differential being XOF 94,051 (or ≅ €143) with a median of XOF 79,200 (or≅ €121).

9.3 Enrolment in Informal and Formal Microfinance: Crowding out?

This section describes the financial landscape of the micro-entrepreneurs and evaluates the extent of their use of both informal and formal microfinance. It also seeks to determine whether or not there has been any crowding out of formal microfinance on informal finance. Before proceeding, let us note that the concept of informal finance is used here to indicate financial activities that take place outside the legal framework governing financial and microfinance markets.[5] Four informal and two formal financial mechanisms were identified during the survey. The informal mechanisms include Rotating Savings and Credit Associations (ROSCAs)—also referred to as *Pari*—money collectors locally known as *Cauri d'or*, loans between relatives and friends, and suppliers' credits (see Box 9.1). The formal financial mechanisms include ownership of cooperatives or bank accounts as well as formal microcredit.

It is important to note that some micro-entrepreneurs only resorted to financial mechanisms from time to time, and this sporadic use needs to be taken into account. Otherwise there is a risk of *underestimating the importance of financial participation*.[6] In order to stick to the reality, the survey sought to find out three different financial enrolment rates: (i) the *global enrolment rate,* which indicates the proportion of respondents who used the identified financial mechanism in the ten years prior to the survey; (ii) the *actual enrolment rate,* which reports the proportion of respondents who used the financial mechanism during the twelve months prior to the survey; and (iii) the *potential enrolment* rate, which accounts for the expected evolution in the use

[4] We used a purchasing power parity conversion rate of 214.405 for the year 2010 (<http://www.imf.org/external/pubs/ft/weo/2010/02/weodata/weorept.aspx?sy=2010&ey=2010&scsm=1&ssd=1&sort=country&ds=.&br=1&pr1.x=45&pr1.y=6&c=748&s=PPPEX&grp=0&a>, accessed 15 June 2013).

[5] This definition is in line with that of the International Labour Organization.

[6] Some financial mechanisms—such as ROSCAs—have a pre-defined life cycle, and it is quite possible to observe some time lag between two ROSCA cycles. In the same way, other informal sources such as supplier's credit can largely depend on other cyclical circumstances.

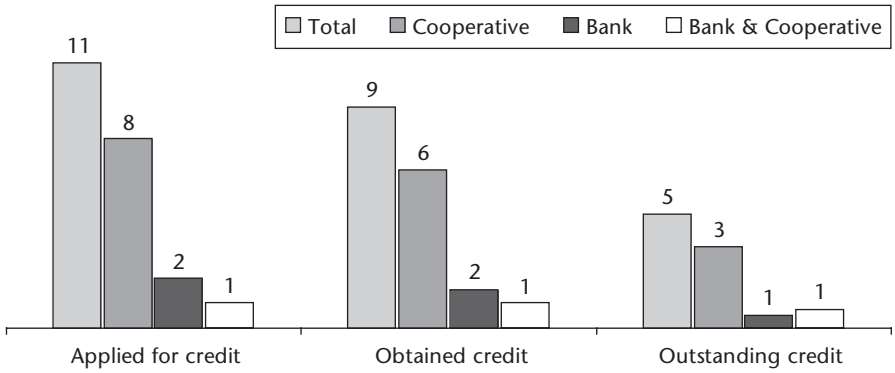

Figure 9.2 Micro-entrepreneurs' access to formal credit (per cent)

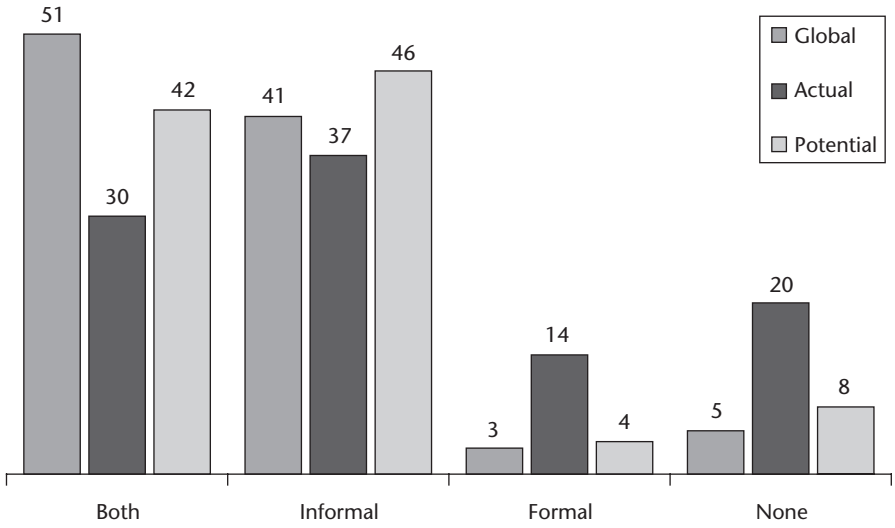

Figure 9.3 Use of both informal and formal finance (per cent)

informal markets. Therefore, it is evident that some micro-entrepreneurs (51 per cent) had been resorting to both types of financial markets, either simultaneously or successively (Figure 9.3). Restricting the time span to the twelve months prior to the survey period, this proportion falls to 30 per cent while it is expected to reach 42 per cent over the following twelve months

Comparing the global and actual enrolment rates, it appears that about 21 per cent of micro-entrepreneurs who were using both informal and formal finance did not do so during the previous twelve months (51 per cent minus 30 per cent). It is interesting to check out what their financial choices were during that period. If they decided to resort exclusively to formal

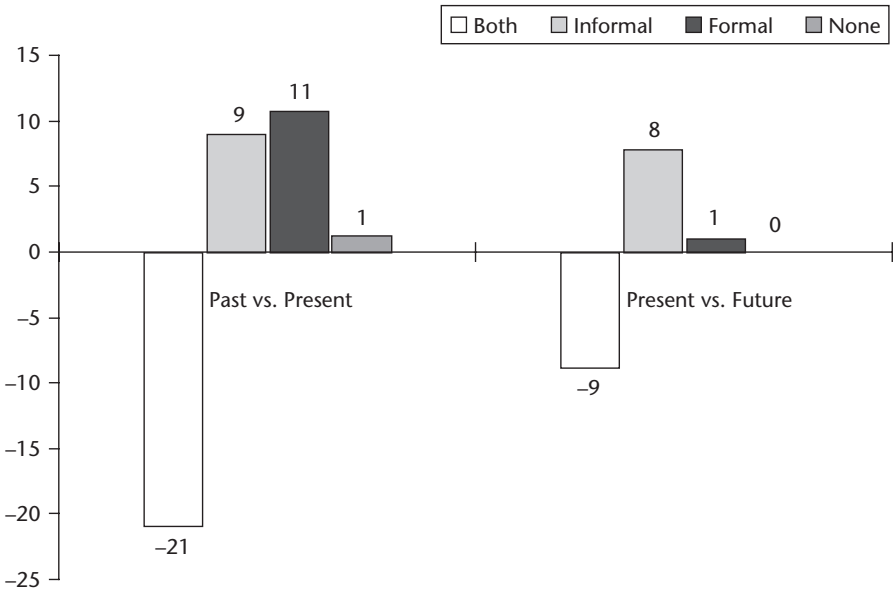

Figure 9.4 Evolution in enrolment rates (per cent)

microfinance, this would signal the presence of (some) crowding out of informal finance by formal microfinance. In the opposite case (i.e. they decided to resort exclusively to informal finance), this would signal the absence of any crowding out effect of informal finance by formal microfinance. The analysis of the changes in the actual versus global enrolment rates revealed that about 9 per cent of the micro-entrepreneurs who were previously using both informal and formal finance went back to informal finance, while 11 per cent decided to resort exclusively to formal microfinance (Figure 9.4).[7] The net level of crowding out is only 2 per cent. This finding suggests rather a limited substitution of informal finance by formal microfinance. Moreover, when micro-entrepreneurs were asked to reveal their future financial choices—as highlighted by the second part of Figure 9.4 (Present vs. future)—the proportion of micro-entrepreneurs who said they were likely to shift from informal to formal microfinance fell to only 1 per cent. Therefore, assuming their expectations about their own future behaviour to be valid, we can confidently assert that the crowding out of informal finance by formal microfinance is likely to remain limited, at least in the foreseeable future.

[7] The 11 per cent of micro-entrepreneurs who moved from informal to formal microfinance were almost evenly split between banks and cooperatives: 5 per cent resorted exclusively to formal banks, while 4 per cent resorted exclusively to formal cooperatives, and the remaining 2 per cent used both banks and cooperatives.

9.4 How Micro-Entrepreneurs Combine Different Financial Mechanisms

In the section 9.3, it was shown that some micro-entrepreneurs combine both informal and formal finance. This section pushes the analysis further by explicitly examining how micro-entrepreneurs combine the six financial mechanisms identified during the survey. We use statistical techniques—namely correspondence and cluster analysis techniques—that allow the structure hidden within datasets to be analysed. While correspondence analysis is a data reduction technique that allows grouping correlated categories of variables (Benzecri, 1973; 1978; Lebart, Morineau, and Kenneth, 1984; Greenacre, 2007), cluster analysis allows observations to clusters to be assigned in such a way that two objects from the same cluster are more similar than two objects from different clusters (Řezanková, 2009).[8] In this study, we use the correspondence analysis output as the input for the cluster analysis. This is a useful method for obtaining refined clusters (Ciampi, Gonzalez, and Castejón, 2005). Eight clusters were identified. Each cluster displays a distinctive pattern of combining the financial sources. Table 9.2 provides a detailed description of each cluster.

Clusters 1 to 3 encompass micro-entrepreneurs who combine both informal and formal financial mechanisms. In absolute terms, the cooperative account is the formal financial mechanism that is most likely to be combined with the use of informal finance (clus2 and clus3). The next three clusters (clus4=clus6) comprise micro-entrepreneurs who resort exclusively to informal finance while the last two clusters (clus7 and clus8) comprise respectively the micro-entrepreneurs who resorted exclusively to formal finance and the micro-entrepreneurs who did not resort to financial markets.

These results show that it is not unusual for micro-entrepreneurs to combine informal and formal financial mechanisms. However, a question remains unanswered: Who is combining both informal and formal microfinance? The next section analyses whether the combined use of informal and formal microfinance applies to a particular category of micro-entrepreneurs or whether it is a behavioural pattern common to the majority of them.

[8] Hierarchical clustering (ward's linkage) was applied to the coordinates of the correspondence analysis solution. The results of hierarchical clustering were further refined using k-means clustering.

Table 9.2 Description of the clusters

Clusters	Description	Freq	Per cent
Clus1	Micro-entrepreneurs who obtained a formal credit and yet resorted to informal finance; namely the supplier's credit (82%), the Cauri d'or (59%), the Pari (47%) and the loans between relatives and friends (18%).	34	9
Clus2	Micro-entrepreneurs owning a bank account and who are also likely to use informal finance such as supplier's credit (87%), the Cauri d'or (41%), the loans between relatives and friends (34%), the Pari (21%). Their probability of owning a cooperative account is estimated at 41%.	71	18
Clus3	Micro-entrepreneurs owning a cooperative account and who are likely to resort to informal finance such as supplier's credit (77%), the Cauri d'or (73%), the Pari (42%), the loans between relatives and friends (33%)	97	24
Clus4	Micro-entrepreneurs who used informal financial mechanisms except the supplier's credit: the Cauri d'or (89%), the Pari (33%), the loans between relatives and friends (3%).	36	9
Clus5	Micro-entrepreneurs who used exclusively informal financial mechanisms, except the loans from relatives/friends: the supplier's credit (100%), the Cauri d'or (55%), the Pari (32%).	96	24
Clus6	Micro-entrepreneurs who used exclusively informal financial mechanisms: the loans from relatives/friends (100%), the supplier's credit (100%), the Cauri (69%), and the Pari (47%).	32	8
Clus7	Micro-entrepreneurs who used only formal finance: the bank account (83%), the cooperative account (67%), and the formal credit (8%).	12	3
Clus8	Micro-entrepreneurs who did not use any financial mechanism.	20	5
	Total	398	100

Note: For each cluster, the probabilities for the micro-entrepreneur to resort to each financial mechanism are indicated between blankets.

9.5 Which Kinds of Micro-Entrepreneurs Are Using Both Informal and Formal Microfinancial Mechanisms?

In this section, we analyse the profiles of the micro-entrepreneurs to identify which kinds of micro-entrepreneurs are combining both informal and formal microfinance. This can be done in different ways (e.g. analysis of contingency tables, correspondence analysis, multivariate analysis of variance, discrete choice mode, etc.). We opted for the discrete choice models and used a multinomial logit model to estimate the probability of a micro-entrepreneur belonging to each of the eight clusters conditional on his/her demographic characteristics. The advantage of this statistical technique is that its results are easily interpretable. As it appears in the next table, Table 9.3, we found significant differences in the profiles of micro-entrepreneurs across the identified clusters.

Table 9.3 Marginal effects obtained from multinomial logit

	clus1	clus2	clus3	clus4	clus5	clus6	clus7	clus8
Income	2.09E–07[a]	5.28E–07[a]	–1.34E–07	–1.96E–07	–1.02E–07	–2.84E–07[b]	6.45E–10	–2.11E–08[a]
	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)	(0.00E + 00)
Age	0.0043[a]	0.0026	–0.0053[b]	–0.0013	0.0002	–0.0005	1.8E–05[a]	4.13E–05
	(0.0012)	(0.0018)	(0.0024)	(0.0014)	(0.0025)	(0.0013)	(1.00E–05)	(0.0001)
Dependency ratio	–0.0001	0.0002	0.0001	0.0002	–0.0005	0.0001	1.91E–07	–5.03E–09
	(0.0002)	(0.0003)	(0.0004)	(0.0002)	(0.0004)	(0.0002)	(0.00E + 00)	(1.00E–05)
Formal education (*yes:1 no:0*)	0.1068[a]	0.0965[c]	–0.0621	–0.0237	0.1113[c]	–0.0062	0.0000	–2.90E–05
	(0.0404)	(0.0540)	(0.0618)	(0.0351)	(0.0605)	(0.0366)	(0.0002)	(0.0019)
Koranic education (*yes:1 no:0*)	–0.0390	0.1363	0.0316	–0.0001	–0.0975	–0.0452	–0.0068	–0.0027
	(0.0444)	(0.0888)	(0.0891)	(0.0002)	(0.0764)	(0.0363)	(0.0351)	(0.0019)
Gender (*man:1 woman:0*)	–0.0593[b]	0.1488[a]	0.0532	–0.0516	0.1181[b]	0.0268	0.0001	–0.0001
	(0.0301)	(0.0458)	(0.0572)	(0.0380)	(0.0596)	(0.0338)	(0.0002)	(0.0019)
Religion (*Christian:1 other:0*)	–0.0136	0.0420	–0.0382	0.0140	0.0232	–0.0245	–0.0022[b]	–0.0006
	(0.0318)	(0.0643)	(0.0741)	(0.0427)	(0.0705)	(0.0365)	(0.0011)	(0.0020)
Ethnicity (*mossi:1 other:0*)	–0.0063	–0.1864[a]	–0.0084	0.0906[a]	0.0594	0.0085	0.0024[b]	0.0403[b]
	(0.0325)	(0.0670)	(0.0748)	(0.0302)	(0.0693)	(0.0413)	(0.0011)	(0.0165)
marital status (*couple:1 single:0*)	0.0415	0.0156	–0.0106	–0.0200	0.0385	–0.0593	0.0002	–0.0059
	(0.0262)	(0.0477)	(0.0672)	(0.0381)	(0.0613)	(0.0466)	(0.0002)	(0.0038)

Note: Robust standard errors are reported. The superscripts a, b, and c indicate respectively significance levels of 0.01, 0.05, and 0.10.

Let us first consider the micro-entrepreneurs who used both informal and formal finance; that is, micro-entrepreneurs in the first three clusters. The probability of belonging to the *first cluster*—which is made up of micro-entrepreneurs who have obtained a formal credit and yet resorted to informal finance—is higher for *wealthier, older, educated (formal education)*, *and female* micro-entrepreneurs. The probability of belonging to the *second cluster*—which is made up of micro-entrepreneurs who combine the use of a bank account with informal finance—is higher for *wealthier, educated (formal education), male, and non-mossi* micro-entrepreneurs.[9] Finally, the probability of belonging to the *third cluster*—which is made up of micro-entrepreneurs who combine the ownership of a cooperative account with informal finance—is higher for *younger* micro-entrepreneurs. Summing up, we note that the micro-entrepreneurs who combine both informal and formal finance have varying demographic profiles. Globally, two types of profiles can be highlighted: the micro-entrepreneurs who combine the ownership of a bank account and/or a formal credit with informal finance are *wealthier* and *more educated*, while those combining the ownership of a cooperative account with the use of informal finance (clus2) are likely to be *younger* and not necessarily *wealthy or educated*. Indeed, the probability of belonging to the second cluster is neither dependent on income nor on education level.

Three other points are worth noting with respect to the above results. First, they reveal that *wealthier and/or female* micro-entrepreneurs have a higher probability of belonging to the first cluster. Considering that this cluster is made up of micro-entrepreneurs who obtained a formal credit, we can infer that the wealthiest female micro-entrepreneurs have easier access to formal credit. It should be noted, however, that the positive correlation between income and access to formal credit cannot be considered, *ipso facto*, as a causal relationship whereby higher income necessarily enables easier access to formal credit. The causal relationship, if any, can be in the other direction as well, that is, access to formal credit can lead to higher earnings. The fact that women are more likely to obtain formal credit than men reveals a gender bias in microcredit programmes, which tend to focus more on female than on male micro-entrepreneurs. Second, the micro-entrepreneurs resorting exclusively to informal finance (clusters 4, 5, and 6) are globally more likely to be low-income earners and/or uneducated. Third, we observe a negative income effect on the probability of belonging to the eighth cluster which comprises micro-entrepreneurs without any financial activity. This reflects the preponderance of the poorest in this cluster.

[9] The fact that non-mossi micro-entrepreneurs are more likely to combine informal and formal finance constitutes quite probably a diversification strategy, as they cannot rely on a dense informal social network, unlike the mossi for whom Ouagadougou is at the centre of their native region.

9.6 Contrasting the Purposes of Using Informal and Formal Microfinance

Having described how micro-entrepreneurs combine the different financial mechanisms available to them in section 9.4, this section seeks to contrast the different uses of informal and formal microfinance. Table 9.4 provides an overview of the micro-entrepreneurs' financial transactions through the identified financial mechanisms during the twelve months prior to the survey period. Cash-out refers to deposits or loan granted by the micro-entrepreneurs through the financial mechanism, while cash-in refers to withdrawals or loan received by micro-entrepreneurs through the identified financial mechanism.

The remainder of this section seeks to determine how micro-entrepreneurs used the financial resources mobilized through the above financial mechanisms. First, we contrast the use of those mechanisms either for saving or for borrowing before analysing to what extent the financial resources mobilized by micro-entrepreneurs through the above financial mechanisms were used for commercial or non-commercial (private) purposes.

i. Borrowing vs. Saving

Determining whether the micro-entrepreneurs resorted to formal microfinance either for saving or borrowing is straightforward, given that a large majority of micro-entrepreneurs did not manage to obtain a formal credit. Recall that micro-entrepreneurs who obtained a formal credit represent 9 per cent of the entire sample. Considering only the micro-entrepreneurs who owned an account at a bank and/or cooperative (i.e. 254 micro-entrepreneurs), this proportion rises to 16 per cent. In other words, about *84 per cent* of

Table 9.4 An overview of the financial flows of the micro-entrepreneurs over the 12 months prior to the survey

Financial mechanism	N	Deposits/outgoing loans		Withdrawals/incoming loans	
		XOF	Euros	XOF	Euros
Cauri d'or	198	34,100,000	51,985	27,500,000	41,923
Relatives/friends	26	16,800,000	25,611	16,600,000	25,307
Pari (ROSCAs)	77	41,300,000	62,961	21,900,000	33,386
Suppliers' credit	108	23,000,000	35,063	26,500,000	40,399
Outstanding formal credit	23			27,200,000	41,466
Total		115,200,000	175,621	119,700,000	182,481

Note: The amount invested in ROSCA is normally equal to the amount received from it at the end of the life cycle of the ROSCA. The difference observed here comes from the fact that some ROSCAs to which the micro-entrepreneurs adhere had not come to the end of their life cycle.

micro-entrepreneurs who owned a formal account used it for saving purposes. Contrariwise, the analysis of the use of informal finance as a saving or a borrowing mechanism is trickier, as any micro-entrepreneur could easily combine the status of borrower, lender, and saver. For simplicity, we restrict the analysis to the twelve months prior to the survey period. About 264 micro-entrepreneurs had been using informal finance during this period. We first consider all the micro-entrepreneurs globally (Figure 9.5) before contrasting the eighth clusters identified earlier (Figure 9.6). Nonetheless, the results reported in the next figures do not include the use of ROSCAs. Indeed, it is the position of the micro-entrepreneur in the order of the allocation of the common pot that determines whether he/she used the ROSCA as a saving or a borrowing mechanism. Unfortunately, this information was difficult to obtain and, thus, no attempt was made to disentangle the effective use of ROSCAs as a borrowing or a saving mechanism.

It appears that micro-entrepreneurs used the informal finance—apart from ROSCAs–for saving and/or for both saving and borrowing. Only a very small number of micro-entrepreneurs resorted to informal finance exclusively for borrowing (Figure 9.5). The analysis of the purposes for using informal finance by micro-entrepreneurs resorting to both informal and formal finance confirms this pattern (Figure 9.6). It is particularly interesting to note that the micro-entrepreneurs used informal finance mainly for saving purposes. This finding is in line with a number of studies that highlight both the need and capacity of low-income individuals to save despite important revenue constraints (Hogarth and Anguelov, 2003; Gugerty, 2007). This aspect is often

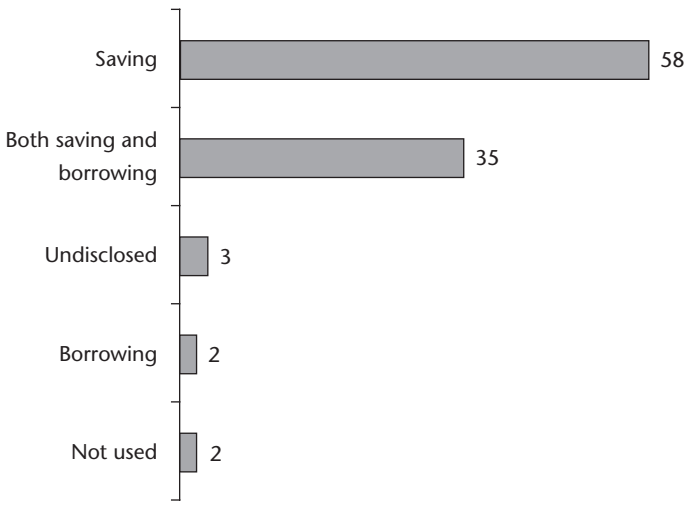

Figure 9.5 Purposes for using informal finance by micro-entrepreneurs (per cent)

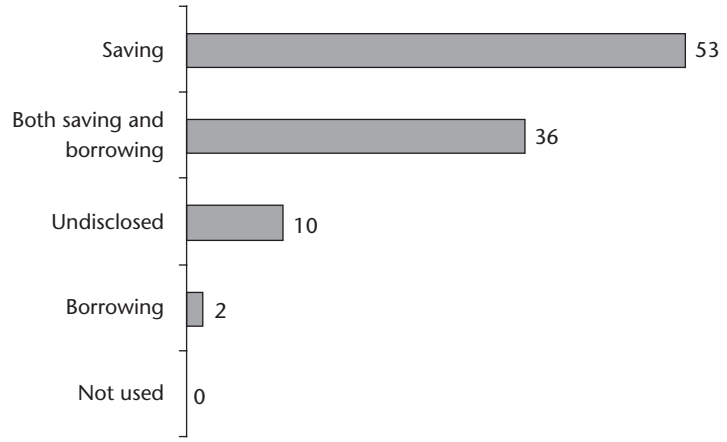

Figure 9.6 Purposes for using informal finance by micro-entrepreneurs combining informal and formal (per cent)

Note: In the above figures, the 'undisclosed' category refers to micro-entrepreneurs who did not disclose the reasons why they resorted to informal finance.

missed by financial providers in developing countries, who tend to emphasize the need of low-income individuals for credit while downplaying their capacity to save. Consequently, often, few savings options are offered to this income group (Karlan, 2010).

One might wonder why a micro-entrepreneur who owns a bank and/or a cooperative account would actually resort to informal saving mechanisms. At least three reasons explain this behaviour. First, the majority of micro-entrepreneurs (about 70 per cent) revealed that their choice was motivated by the need to take advantage of the disciplining mechanism offered by informal financial mechanisms. Indeed, as documented by Gugerty (2007), some informal financial mechanisms impose stringent saving discipline on individuals with time-inconsistent or hyperbolic preferences.[10] Another reason cited by a fair proportion of the micro-entrepreneurs (31per cent) is that some informal financial mechanisms allow enhancing social ties. This finding is in line with a relatively new trend in economic literature which suggests that informal finance plays a role of social inclusion that cannot be provided by formal microfinance (Guérin, Morvant-Roux, and Servet, 2011). Finally, it was observed that even though only a small number of micro-entrepreneurs managed to obtain a loan from a formal source, a large majority of micro-entrepreneurs (68 per cent)

[10] Hyperbolic preferences refer to situations where preferences between two delayed rewards reverse in favour of the more proximate reward (Frederick, Loewenstein, and O'Donoghue, 2002). For instance, individuals with time-inconsistent preferences may declare that they prefer saving to spending their earnings, but once they have money they cannot refrain from spending it. Such individuals usually require an outside commitment mechanism.

declared they maintained a cooperative and/or bank account in the hope of securing formal credit in the future.

ii. Commercial vs. Private Use

While examining how the financial resources mobilized through the different financial mechanisms were used by micro-entrepreneurs, we identified three categories of expenditures: (i) commercial expenditures, (ii) spending on equipment such as motorbikes and bicycles, and (iii) private expenditures. Since we could not obtain detailed information about the use of funds from bank and cooperative accounts, our analysis is restricted to the utilization of formal credit and of the resources mobilized through informal finance during the twelve months preceding the survey. The total credits secured by micro-entrepreneurs amounted to XOF 67,000,000 (≈ €102,141), of which XOF 27,000,000 (≈ €41,466) were still outstanding at the time of the survey. At the same time, the flow of financial resources from informal finance during that period amounted to XOF 92,425,500 (≈ €140,902).

Two major tendencies can be identified in the use of the financial resources mobilized through formal credit and informal financial mechanisms. On the one hand, the formal credit obtained by micro-entrepreneurs is mainly used for business activities and, to a lesser extent, for private non-commercial needs. A small proportion is used for the acquisition of equipment such as motorbikes and bicycles. We did not consider such equipment to be commercial expenditure, since they are also used for private purposes (Figure 9.7).

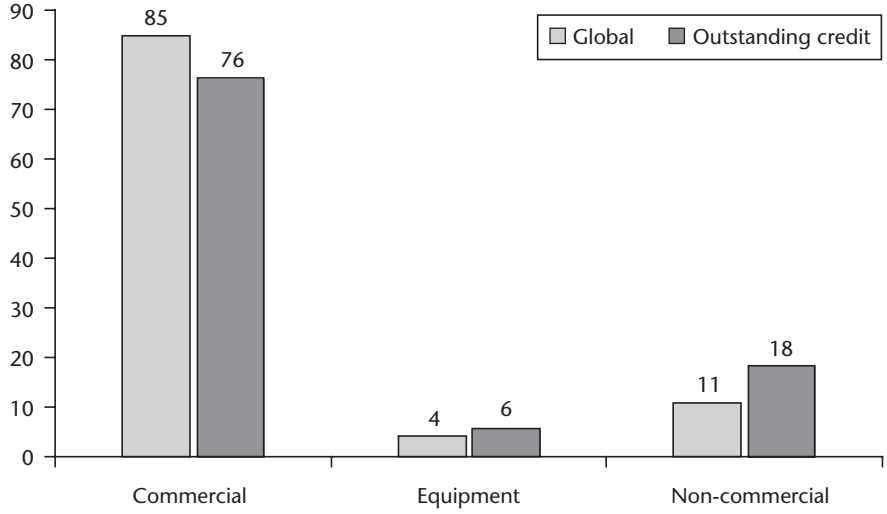

Figure 9.7 Micro-entrepreneurs' use of formal credit (per cent)

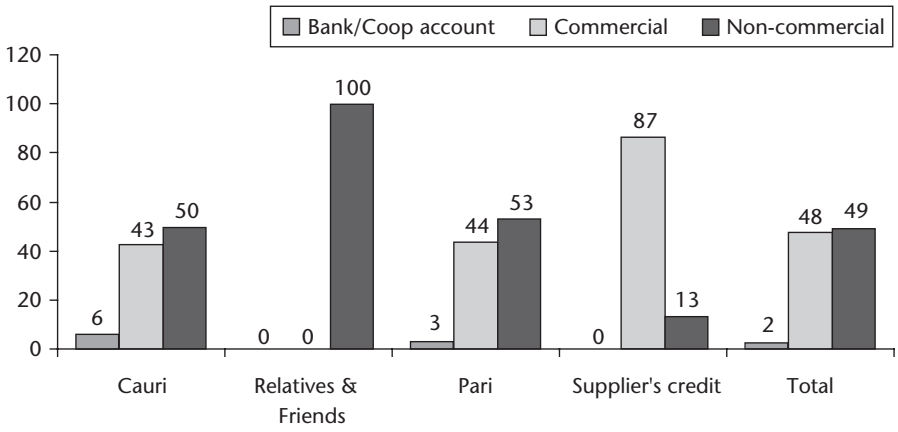

Figure 9.8 Micro-entrepreneurs' use of informal financial resources (per cent)

On the other hand, the resources mobilized through informal finance are almost evenly split between commercial and non-commercial purposes, as highlighted by the last two columns of Figure 9.8. Nevertheless, some informal financial mechanisms are almost exclusively used either for commercial purposes or for non-commercial purposes. For example, supplier's credit is almost entirely used for business purposes and loans from friends and relatives are used exclusively for private needs.

Finally, an extremely small proportion of informal financial resources—only 2 per cent—were directly deposited in formal bank or cooperatives accounts.[11] In other words, financial intermediation between informal and formal microfinance, whereby financial resources mobilized through informal financial channels are injected into formal (micro) finance was quite limited. However, it should be noted that that some scholars have observed the existence of financial *intermediation* between informal and formal finance whereby financial resources obtained through formal microfinance were on-lent or reallocated through informal financial channels (Morvant-Roux, 2009) or used to maintain *solvability in informal financial markets*(Guérin, Venkatasubramanian, and Héliès, 2009). Hence, these two findings suggest that financial resources mobilized through formal channels are likely to fuel informal financial mechanisms rather than the opposite.

[11] This refers to the amount of informal financial resources deposited directly in bank and/or cooperative accounts as soon as they are received. We did not consider deposits made after the money had been recycled for the micro-entrepreneurs' other activities.

9.7 Conclusions

In this chapter, it appeared that it is not unusual for micro-entrepreneurs operating in sub-Saharan African markets—the markets of Ouagadougou in this case study—to resort to both informal and formal microfinance. In particular, the use of cooperatives which are the emblematic microfinance institutions in Ouagadougou is often combined with the use of informal financial mechanisms. Our empirical evidence shows there is weak substitutability between informal and formal microfinance. Hence, the coexistence of informal and formal microfinance cannot be viewed just as a temporal or anecdotal phenomenon, but rather, as an important trend which is likely to persist over time. A direct policy implication of this finding is that microfinance institutions ought to take into account the *resilience* of informal finance and try to find out how their own products can be better harmonized with the pre-existing informal financial mechanisms.

The analysis of the socio-economic characteristics of micro-entrepreneurs revealed that wealthier and more educated micro-entrepreneurs were more likely to combine both informal and formal finance, while less wealthy micro-entrepreneurs mostly resorted to informal finance. However, it is important to note that the ownership of cooperative accounts does not seem to be affected by the wealth of the micro-entrepreneurs. This suggests that cooperatives are making efforts to be accessible to all income levels, even though the poorest micro-entrepreneurs remained totally excluded from both formal and informal financial markets.

It appeared also that the majority of micro-entrepreneurs used informal and formal microfinance mainly for saving purposes. Exclusive borrowing was quite rare. This clearly suggests that micro-entrepreneurs' saving capacity should not be downplayed. The *poor can and do save*. Thus, formal microfinancial providers would be well advised to design savings products adapted to the needs of these micro-entrepreneurs. Another striking finding is that most of the micro-entrepreneurs who saved through a bank and/or a cooperative account also kept savings in an informal finance institution. This shows that participation in informal finance is not necessarily triggered by the lack of access to the formal financial market. Rather, a significant number of micro-entrepreneurs reported resorting to informal finance in order to enhance their savings discipline and/or their social ties while maintaining a formal account in the hope of eventually securing a formal loan.

Finally, our survey revealed that the financial resources mobilized through formal credit were essentially used for commercial expenditures, while informal financial resources were used to meet both commercial and

non-commercial needs—with the exception of suppliers' credit which was used exclusively for commercial purposes. This specialization reveals that formal credits available to micro-entrepreneurs are essentially business oriented.

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