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Abstract

We study borrowers' preferences over bank and family loans based on field work undertaken in rural Rwanda. We randomly assigned willingness-to-pay questions for a hypothetical loan offer either by a bank or by a family member to a sample of 480 households. Informal family loans are typically easier to access. Because of the social costs they imply, it is widely believed that family finance is less attractive than formal finance. Our empirical results, however, show no significant difference in preferences over these two choices. This suggests that even if formal credits were widely accessible, people would still also utilize informal finance.

JEL Classification: D14, O17

Keywords: Informal finance; family loans; bank loans; social collateral; willingness-to-pay

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1. Introduction

Poor households in developing countries rely on a mix of different financial tools (Collins et al. 2009). Although in many countries financial sector reforms intend to promote formal financing opportunities in order to allocate resources more efficiently (Wurgler 2000), households' borrowing preferences remain diverse and poor households often rely on several different financial tools, many of them from informal sources. In particular, family finance, i.e. borrowing from family and friends, constitutes a large share of informal finance sources in developing countries (Udry 1990; Banerjee and Duflo 2007; Turvey and Kong 2010, Demirgüç-Kunt et al. 2015), because they offer cheap and easily accessible credit (Lee and Persson 2013). As suggested by Guérin et al. (2012), formal and informal financial services should be seen as a continuum, rather than as two mutually exclusive options. In the academic literature, this continuum is increasingly recognized and the pros and cons of different lending alternatives are explained by existing theories of transaction costs, asymmetric information, and two-sided altruism. The extent to which these economic drivers translate into clear preferences of borrowers for one product or the other has hardly been studied, though.

Using household data from rural Rwanda, this paper provides evidence on borrowers' preferences over bank finance versus family finance. We asked a sample of 480 households to state their willingness-to-pay (WTP) for a hypothetical loan offer and randomly assigned a family loan offer to half of the sample and a bank loan offer to the other half. Leaving all else equal, we thus disentangle people's pure preferences from external conditions such as interest rates or collateral requirements.

2. The economics of family finance

Explanations for the existence of informal finance are coming from both the supply side perspective and the demand side perspective. The supply side perspective stresses that the personal relationship between borrower and lender inherent to informal finance reduces information asymmetries substantially and thereby also mitigates cost-increasing market imperfections such as moral hazard, adverse

selection, or contract enforcement problems (Stiglitz 1990; Varian 1990; Jain 1999). Existing empirical evidence of relationship-based financing especially posits the benefits of social ties to increase repayment rates via social sanctions (Besley and Coate 1995; Karlan et al. 2009). On the demand side, informal finance is much more accessible to the poor, because various reasons ration them out of the formal market: affordability, distance to the next financial institution, lack of necessary documentation, collateral requirements, and financial illiteracy – just to name a few (Demirgüç-Kunt et al. 2015; Karaivanov and Kessler 2015).

While this classical strand of the literature clearly emphasizes the advantages of informal finance from both supply side and demand side perspectives, more recently also disadvantages of informal finance have been pointed out. In a theoretical model, Karaivanov and Kessler (2015) highlight the costs of social ties associated with family finance. In case of default, the borrower jeopardizes social values such as friendship and reciprocity[1], whereas loosing physical collateral in formal finance arrangements is assumed to imply much less burden on both parties. A related model by Lee and Persson (2013) uses the concept of two-sided altruism: The family lender is willing to provide cheap credit even if returns are low. The family borrower is averse to risking money borrowed from family and friends. This line of argumentation concludes that individuals are rather reluctant to borrow from family and friends and only do so because formal credits are not accessible. Our paper seeks evidence for this reluctance to borrow from family financial sources.

3. Experimental design

The methodology used in this paper is taken from the literature on WTP methodologies. We employ a contingent valuation method to study the borrowing preference among 480 rural households in Rwanda's Southern Province. Beyond the analysis presented in this paper, the purpose of the survey is to provide a baseline for the evaluation of a financial literacy training programme specially tailored to savings groups. Therefore, the sample focuses on those household members who are

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[1] „[...] when the debt is free of cost, this implicitly means that the debtor should be able to lend in turn when the creditor will be in need" (Guérin et al. 2012: 133).

participating in such savings groups. We used smart mobile devices to administer the questionnaire[2] and randomly offered each respondent either a hypothetical bank loan or a loan by friends and relatives (see Figure 1 for an illustration); 230 respondents received the former offer, 250 the latter.[3] We chose "a funeral of a relative" as the financing purpose because this is a very typical and relatively unforeseeable expenditure. Using a limited interactive bidding process, we identify the interviewee's WTP for these hypothetical loan alternatives. In order to elicit pure preferences, the question only varies with respect to the choice of lenders leaving all other conditions constant.[4]

"Imagine you need 5,000 Rwanda Franc (RWF) in order to pay for the funeral of a relative. A bank / a friend or relative offers you to lend you this money for a period of three months. After three months you have to pay back 5,750 RWF. Would you borrow the money from a bank / a friend or relative?"

Figure 1: Structure of willingness-to-pay question
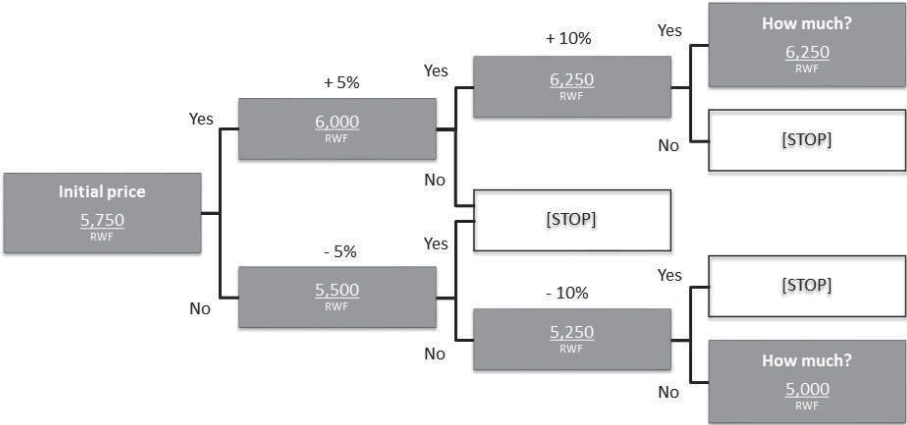
Note: 5,000 Rwanda Franc (RWF) equates to roughly 6 Euro (EUR) at exchange rates (updated Oct 16, 2015).
Source: PROFIR baseline dataset 2015, own illustration.

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[2] The digital questionnaire was formatted for administration on tablets by ikapadata, Cape Town, South Africa.
[3] See Appendix, Table A1 for descriptive statistics on the balancing of the two samples.
[4] While it is sometimes argued that family finance is free of costs, in our case family loans are hypothetically offered with interest rates. This is in line with evidence provided by Guérin et al. (2012). They find average monthly interest rates for family finance of about 3 % compared to 1 % for a bank loan.

4. Results

Looking at borrowers' hypothetical WTP for family finance versus bank finance, we find no difference between these two types of lending. Although households are willing to pay slightly higher amounts for informal financial services, on average, the difference is neither statistically nor economically significant. The non-response rate is relatively low at 9 percent.[5] Moreover, we run a simple multivariate regression with the stated WTP as dependent variable in order to explore the heterogeneity along potential covariates and find that especially a high level of financial literacy is negatively correlated with respondents' WTP (see Table 1). Other socio-economic variables do not have a strong and significant influence on the WTP. The difference between the two loan offers remains insignificant, though.

5. Concluding remarks

Although the majority of households in marginalized communities borrow from informal sources, "informal deals are rarely private, and exposure to the public gaze can cause much social discomfort" (Collins et al. 2009: 54). Our small test undertaken alongside a large household survey in rural Rwanda, however, does not confirm a strong antipathy against borrowing from family members or friends. It can be seen that there is no significant difference in the willingness-to-pay between a hypothetical bank loan offer versus a hypothetical family loan offer. Our finding suggests that social and economic costs associated with both types of finance, in their entirety, do not differ substantially. Hence, even if formal credits were widely accessible in developing countries, people would probably still utilize both the formal and the informal system.

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[5] These respondents refused to answer this question.

Table 1: Source of finance and its effect on the willingness-to-pay

	(1)	(2)	(3)
Bank finance△	-45.345	-46.888	-30.884
	(0.303)	(0.287)	(0.507)
Financial literacy			
High financial literacy□		-91.298[*]	-106.312[**]
		(0.066)	(0.040)
Low financial literacy□		-85.965	22.012
		(0.446)	(0.858)
Demographics			
Age			-19.047
			(0.138)
Age^2 / 100			16.369
			(0.222)
Male△			-3.144
			(0.954)
HH size			18.145
			(0.191)
Marital status of respondent			
Widowed△			271.382[**]
			(0.030)
Divorced△			179.295
			(0.167)
Married△			158.171[*]
			(0.081)
Education of respondent			
Secondary education			7.919
and more△			(0.920)
Literacy△			88.054[*]
			(0.099)
Household wealth of respondent			
Owns land			63.983
(more than 1 hectare)△			(0.407)
Owns bicycle△			2.659
			(0.965)
Owns motorcycle△			-127.014
			(0.551)
Owns cows△			61.695
			(0.198)
Owns goats△			-10.654
			(0.823)
Observations	448	448	414
R^2	0.002	0.011	0.044

Note: Values denote estimated coefficients with p-values in parentheses. [*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$ denote statistical significance and △ is for a discrete dummy variable (0/1). We used four questions taken from the Lusardi and Mitchell (2011) as well as the Cole et al. (2011)-methodology to measure financial literacy (denoted by □), adapted to the Rwandan context. We coded a household as "High financial literacy" if all four questions were correctly answered and as "Low financial literacy" if none of the four questions was correctly answered. Source: PROFIR baseline dataset 2015, own calculation.

Appendix

**Table A1: Sample characteristics by type of hypothetical lender**

Type of lender:	Family finance		Bank finance		Diff.	p-value
	Mean	St. Dev.	Mean	St. Dev.		
WTP	5572.34	455.36	5527.00	475.37	45.35	0.3032
Demographics						
Age	41.31	13.36	43.43	14.20	-2.12	0.1054
Male△	0.24	0.43	0.28	0.45	-0.04	0.3474
HH size	4.89	2.10	4.81	1.86	0.08	0.6807
Marital status of respondent						
Single△	0.11	0.31	0.08	0.28	0.02	0.4250
Widowed△	0.12	0.33	0.19	0.39	-0.06*	0.0622
Divorced△	0.07	0.25	0.07	0.25	0.00	0.9113
Married△	0.70	0.46	0.66	0.47	0.04	0.3790
Education & Literacy of respondent						
Primary and less△	0.86	0.35	0.89	0.31	-0.04	0.2744
Secondary and more△	0.12	0.32	0.08	0.28	0.03	0.2430
Other△	0.03	0.16	0.03	0.16	0.00	0.9368
Literacy△	0.66	0.47	0.56	0.50	0.10**	0.0368
Financial decision making & Wealth of respondent						
High financial literacy□	0.27	0.45	0.28	0.45	-0.00	0.9125
Low financial literacy□	0.05	0.22	0.03	0.17	0.02	0.2187
Respondent takes decision on credit△	0.37	0.48	0.42	0.49	-0.05	0.2620
Household owns land (> 1 hectare)△	0.12	0.33	0.10	0.30	0.02	0.4060
Household owns bicycle△	0.23	0.42	0.14	0.34	0.09**	0.0145
Household owns motorcycle△	0.01	0.09	0.01	0.12	-0.01	0.5759
Household owns cows△	0.53	0.50	0.45	0.50	0.08*	0.0863
Household owns goats△	0.55	0.50	0.58	0.50	-0.03	0.5443
Observations	235		213		448	

Note: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$ denote statistical significance and △ is for a discrete dummy variable (0/1). We used four questions taken from the Lusardi and Mitchell (2011) as well as the Cole et al. (2011)-methodology to measure financial literacy (denoted by □), adapted to the Rwandan context. We coded a household as "High financial literacy" if all four questions were correctly answered and as "Low financial literacy" if none of the four questions was correctly answered.
Source: PROFIR baseline dataset 2015, own calculation.

For each score of the financial literacy index, people value the hypothetical loan offer by a bank or by a family member equally. Thus, there is no substantial difference in terms of willingness-to-pay between these two options.

Figure A1: Average willingness-to-pay and financial literacy index
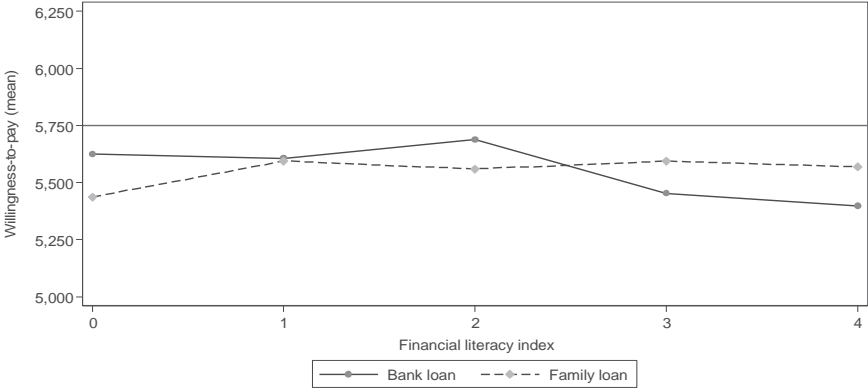
Note: The straight line at 5,750 RWF documents the starting point in the bidding procedure. We used four questions taken from the Lusardi and Mitchell (2011) as well as the Cole et al. (2011)-methodology to measure financial literacy, adapted to the Rwandan context. For each „yes" the respondent gets one point, so that the range of the financial literacy index is from zero to four.
Source: PROFIR baseline dataset 2015, own calculation.

The willingness-to-pay for a hypothetical loan offer by a bank or by a family member does not change for different levels of formal financial inclusion.

Figure A2: Average willingness-to-pay and formal financial inclusion
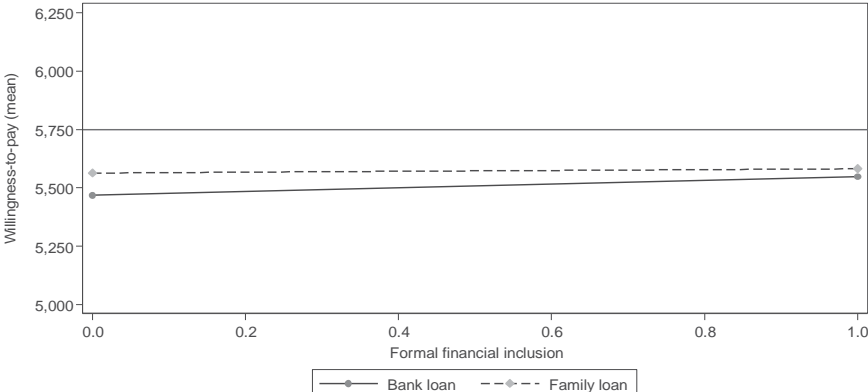
Note: The straight line at 5,750 RWF documents the starting point in the bidding procedure.
Source: PROFIR baseline dataset 2015, own calculation.

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