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The Invisible Collateral

SILU MUDULI, SHRIDHAR KUMAR DASH

A borrower may hesitate to borrow from her close relatives and family members as it costs them in terms of reduction in social insurance in the case of default. This invisible cost reduces credit risk. India's household indebtedness survey shows some evidence on these borrowing preferences. This perspective on borrowing decisions derived from the community can be used as one of the dimensions in credit risk evaluation and in policy formulation.

In a society, reciprocal behaviour among members help individuals achieve social and economic objectives. Rational individuals in communities strategically become members of a social network to reap the benefits by being a part of it (Jackson and Watts 2002). Inside the network, when individuals cooperate with each other, they could act collectively to gain economic values. The level of cooperation will depend on the level of trust among individuals inside the network. This kind of trust in a network acts as a lubricant in economic transactions among the members of the network (Arrow 1974). Thus, we can argue that an individual's pay-off to participate in the network will be a function of an *ex ante* assigned belief or trust by the individual on certain actions of others inside the network. Therefore, individuals in the network are likely to build trust over time to enjoy the benefits of being trustworthy (Coleman 1988; Granovetter 1985). Any loss of trustworthiness in the network will bring disutility for the individual, as others may not cooperate with them as before.

Inside a social network, loss of trustworthiness is most likely to be reflected in the frequency and amount of financial transactions among members of the network. In an informal credit market, pledged collaterals in the case of secured credit act as a deterrent for borrowers to default. However, in the case of unsecured credit, a borrower is likely to lose non-monetary collateral in the form of social trust in the network (Karlan et al 2009). We call this invisible collateral, because the trustworthiness is invisible to public in general. However, this invisible collateral can be a deterrent for the borrower to default.

The problem with invisible collateral is that it cannot be estimated directly by the lender. Besides, the existence of invisible collateral affects the risk associated

with both secured and unsecured credit. Nevertheless, invisible collateral enables lenders to engage with borrowers because in case the borrower defaults, the loss in social trust inside the network will result in reducing social benefits arising out of accessing credit in the future (Guiso et al 2004). Therefore, for an individual there will be a cost of default, which can be termed as social cost of default, which is directly proportional to loss in invisible collateral. In case social cost of default for an individual in a network is high, then the invisible collateral for the same individual is high, and hence the individual is less likely to default and vice versa. We provide a perspective on individuals' social behaviour inside the network and its implications on credit risk evaluation by the lender. We use India's household indebtedness survey data, to argue for the existence of invisible collateral and its linkages with the social cost of default for both rural and urban areas.

Social Cost of Default

The social cost of default is the disutility or reduction of social trust for an individual in the network when the individual defaults on a credit. Lee and Persson (2016) call this shadow cost, which discourages credit default. This is different from peer pressure in the case of joint liability lending programme. In the case of joint liability lending design, members pressurise the individual to repay the credit, and this pressure is external in nature. In this case, the individual is paying not out of their own choice, but due to peer pressure. Whereas the social cost of default is completely internal to the individual, and the individual will pay back the credit even without any peer pressure when the social cost of default of the individual is very high. At the same time, an individual having a very low social cost of default (who does not care about their social reputation) will have lesser incentive to repay the loan.

We can argue that the social cost of default arises from two components: the stand-alone cost of default to the individual, and cost of default due to imitation effect from other members of their

The views expressed in the article are those of the author(s) and not necessarily those of the institution to which they belong.

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network. Stand-alone cost is the core component, which is a function of self-respect and social prestige, and this part of the cost is independent of how others act in the network. Suppose an individual is endowed with a high level of self-respect, then they are less likely to default. On the other hand, the social cost of default due to the imitation effect will depend on the action of others in the network. For example, if everyone in the network is defaulting on a specific credit, then it might be less costly for any individual to default in that network. Similarly, if others in the same network do not default, then the social cost of default for any individual would be higher in that network. Therefore, while evaluating the credit risk of an individual, it will be prudent to also evaluate the behaviour of the community to which the individual belongs.

Thus, if the social cost of default is visible, then a lender would use it for credit risk evaluation as well as credit allocation. However, this cost is completely invisible, but sometimes a borrower can signal it through their actions, such as lender selection. For example, when an individual plans to invest in a risky project, they will prefer to borrow from a lender who is relatively separated from their network (Bygrave and Hunt 2004). Similarly, Galland (2006) finds, borrowing from family and close relatives becomes the last resort despite the zero cost of borrowing. Guérin et al (2012) find that while borrowing from family members and close relatives, Indians feel discomfort because they perceive that they may lose social insurance in the case of default. We provide some evidence from India on how individuals incorporate their social cost of default while borrowing by using the National Sample Survey Office (NSSO) 70th Round Households Indebtedness Survey data (MOSPI 2013).

Household Indebtedness Survey

The NSSO 70th Round Households Indebtedness Survey data (MOSPI 2013) consists of data from both rural and urban areas of India that cover both institutional and non-institutional lenders. Institutional lenders consist of banks, insurance companies, provident fund houses,

financial institutions (including financial corporations and companies), self-help group (SHG)-bank linked banks and non-banking financial companies, and other institutional agencies. On the other hand, non-institutional lenders consist of landlords, agricultural and professional moneylenders, input suppliers, doctors, lawyers, other professionals, and relatives and friends. For our purpose, we have reported the number of individuals out of 1,000 households (as reported in the survey) who borrow from different sources. Our focus is on

how individuals conduct financial transactions with families and friends.

It is observed that, in rural areas, on an average 362 (out of 1,000) individuals are indebted, and 17.4% of those depend on friends and relatives for their funding needs. Similarly, in urban areas 251 (out of 1,000) are indebted and 16.73% of them borrowed from relatives and friends (Table 1). Cultivators rely less on friends and relatives than non-cultivators in rural areas. On the other hand, the self-employed rely more on relatives and friends in comparison to others in urban

Table 1: Borrowing from Relatives and Friends (Profession-wise)

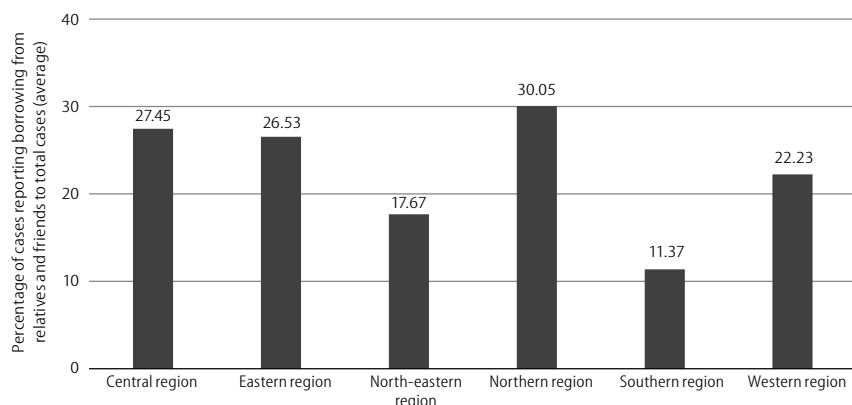
Borrowing Sources	Rural			Urban		
	Cultivator	Non-cultivator	All	Self-employed	Others	All
Per 1,000 households report cash loan outstanding						
Institutional	208	112	172	159	143	148
Non-institutional	200	175	190	122	94	103
of which relatives and friends	67	55	63	49	39	42
Total	408	287	362	281	237	251
Relatives' and friends' share (in %)	16.42	19.16	17.40	17.44	16.46	16.73
Cash loan (in ₹) per ₹1,000 of total cash loan outstanding						
Institutional	584	493	560	791	878	845
Non-institutional	416	507	440	209	122	155
of which relatives and friends	77	90	80	54	34	42
Total	1,000	1,000	1,000	1,000	1,000	1,000
Relatives' and friends' share (in %)	7.70	9.00	8.00	5.40	3.40	4.20

Source: All-India Debt and Investment Surveys (AIDIS).

Table 2: Borrowing from Relatives and Friends over Interest Rate Ranges

Borrowing Sources	Interest Rate (in %)									
	0	0 to 6	6 to 10	10 to 12	12 to 15	15 to 20	20 to 25	25 to 30	More than 30	
Cash loan (in ₹) per ₹1,000 of total cash loan outstanding for different interest rate										
Rural	Institutional	55	798	988	960	929	623	73	209	36
	Non-institutional	945	202	12	40	71	377	927	791	964
	of which relatives and friends	943	0	0	0	0	0	0	0	0
	Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Total amount	9,000								
Relatives' and friends' share (%) 10.48										
Urban	Institutional	67	883	989	995	960	887	195	761	64
	Non-institutional	933	117	11	5	40	113	805	239	936
	of which relatives and friends	933	0	0	0	0	0	0	0	0
	Total	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
	Total amount	9,000								
Relatives' and friends' share (%) 10.37										
Per 1,000 households report cash loan outstanding for different interest rate										
Rural	Institutional	23	463	610	583	587	413	85	136	22
	Non-institutional	506	113	9	65	31	198	490	335	574
	of which relatives and friends	506	0	0	0	0	0	0	0	0
	Total	529	576	619	648	618	611	575	471	596
	Total number of cases	5,243								
Relatives' and friends' share (%) 9.65										
Urban	Institutional	27	514	674	710	592	460	133	328	38
	Non-institutional	501	99	27	28	52	117	413	140	532
	of which relatives and friends	501	0	0	0	0	0	0	0	0
	Total	528	613	701	738	644	577	546	468	570
	Total number of cases	5,385								
Relatives' and friends' share (%) 9.30										

Source: All-India Debt and Investment Surveys (AIDIS).

Figure 1: Rural Financial Dependency on Relatives and Friends

Source: All-India Debt and Investment Surveys (AIDIS).

areas. In terms of the amount of borrowing, 8% of the credit need is met by relatives and friends in rural areas, and the same is 4.2% in the case of urban areas. Non-cultivators borrow relatively higher amounts from relatives and friends in rural areas, while the same is true for the self-employed in urban areas. One can argue that the amount borrowed from relatives and friends depends upon the availability of funds with them. Therefore, the number of cases of borrowing from relatives and friends will be a better indicator of financial dependency on relatives and friends than the amount borrowed. At the same time, the availability of financial institutions will also affect the amount of borrowing from relatives and friends, which explains the significant differences between urban and rural areas with respect to the amount borrowed from relatives and friends.

The dependency of cultivators and the self-employed on relatives and friends for their credit needs is significantly low (Table 1). These livelihood activities are risky in nature, which is known to the individual borrower. Therefore, when an individual is knowingly borrowing for a risky project, they would not like to spoil their reputation in the network, because the social cost of default in the network is high. Hence, it can be argued that when an individual needs credit to invest in risky activities, it is prudent to look outside the network. This argument would become clearer when we look at the data (Table 2, p 14). The table represents the loan numbers as well as the loan amount by ranges of interest rates.¹

We can observe that the borrowing from relatives and friends happens at zero cost. Despite the cost of borrowing being zero, only 10.48% (9.65% of number of loans) of the loan amount is availed from relatives and friends in rural areas. The percentages are similar for urban areas as well. This evidence supports the argument found in the literature that individuals keep family members, relatives, and close friends as lenders of last resort (Galland 2006; Guérin et al 2012). We are attributing these Indian borrowers' behaviour to the existence of invisible collateral in the network in the form of the social cost of default.

Role of Invisible Collateral

As discussed earlier, the imitation effect has an impact on the social cost of default. Higher the imitation effect for default, lesser the social cost of default, and hence higher the credit risk. Therefore, if lenders can observe the prevalence of a higher default rate for a group of borrowers, then an individual in that group is more likely to have lesser social cost of default, and there is higher credit risk. Therefore, it is beneficial for the lenders to take this behavioural phenomenon into account while providing credit. In this way, invisible collateral can be helpful for lenders.

This kind of strategic credit allocation is visible in bank lending to SHGs. To see these linkages, we divided the NSSO data into six different regions (central, northern, north-eastern, eastern, western, southern) as prescribed by the "Status of Microfinance in India 2017–18, NABARD" report (NABARD 2018). The rationale

behind this classification is to make it compatible with the non-performing assets (NPAs) of SHGs for different regions as in the NABARD (2018) report. If we assume that SHGs are like a network of borrowers in a cluster (regions), we can infer some linkages between the social cost of default (existence of invisible collateral) and the default rate. Our hypothesis is that we should see different levels of dependency on relatives and friends on credit needs across these clusters (regions), and higher the dependency on relatives and friends, higher will be the default rate. The cluster (regions)-wise data is reported in Figure 1. It can be observed that individuals in the southern region have the least dependence on relatives and friends for their credit needs. At the same time, individuals in the northern region have the highest dependence on relatives and friends for their credit needs. According to the literature and our arguments posited above, individuals in southern regions are expected to have a higher social cost of default relative to other regions.

A simple linear regression with credit dependency on friends and relatives has been carried out for region dummies to examine the statistical difference across regions in India. Table 3 reports the results of this regression showing that the southern region has significantly lower dependency on relatives and friends compared to other regions. Also, the F-test of the overall regression is significant and confirms regional variations of

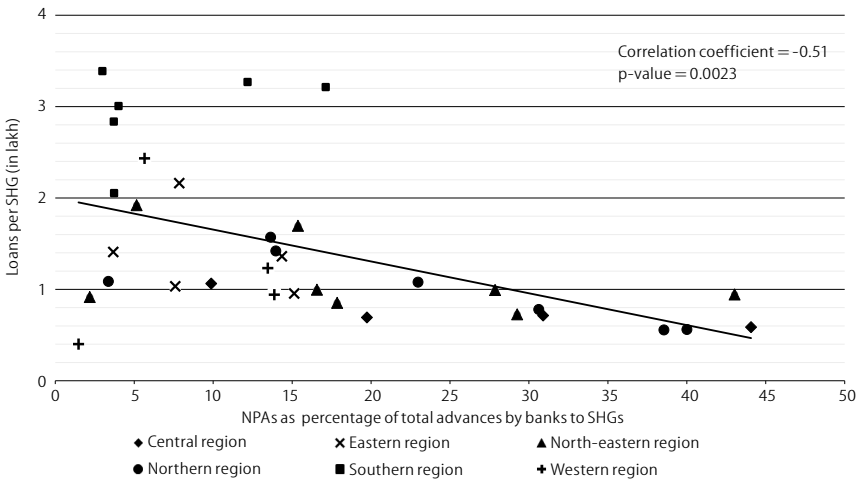
Table 3: Regression Results of Rural Dependence on Relatives and Friends

Region Dummies	Rural Dependence on Relatives and Friends
Eastern region	-0.919 (9.833)
North-eastern region	-9.782 (7.527)
Northern region	2.598 (10.59)
Southern region	-16.08* (7.438)
Western region	-5.220 (8.708)
Constant	27.45*** (6.873)
Observations	29
R-square	0.26
Prob > F	0.07

Robust standard errors in parentheses. * p < 0.05,

** p < 0.01, *** p < 0.001.

Figure 2: Loans per SHGs (in lakh) and NPAs



Source: NABARD (2018).

financial dependency on relatives and friends in India.² Evidence of lower dependency on relatives and friends in the southern region may be due to a higher penetration of SHGs in the region. Therefore, it might be difficult to separate the impacts of social cost of default and SHG penetration. However, if the social cost of default is higher in the southern region, then expected credit default is relatively likely to be lower in southern regions. To see this, we present a scatter plot of the percentage of NPAs of SHGs and loans per SHG (in lakhs) sourced from the NABARD (2018) report in Figure 2. It can be observed that there exists a clustering among different regions. For example, the southern region shows low NPAs and high loans per SHG, while the inverse is true for the central, northern, and north-eastern regions. This clear negative linear association between these variables is suggestive of the credit allocation strategy by banks.

SHGs are mostly based in rural areas and are highly immobile, and the members within an SHG possess high social connectivity with each other. Besides, the majority of members interact on a daily basis, which leads to a high degree of information spillover. Therefore, the social cost of default (existence of invisible collateral) for individuals is expected to be high. Thus, our argument of higher social cost of default leading to both low dependence on close relatives and friends as well as low credit risk is supported by this evidence. Therefore, banks should consider evaluating the presence of the invisible collateral

to make better credit decisions. However, gathering this soft information is costly. But, it is useful in evaluating credit risk from the context of the borrower's community. Figure 1 plots the average number of cases that report the borrowing from relatives and friends to total number of cases of states in each region.

Figure 2 plots the states based on NPAs during 2017–18 and loans per SHG. Each point refers to a state and the label represents the region to which it belongs.

Table 3 shows regression results of rural dependence on relatives and friends on dummies of each region.

Conclusions

The fear of losing social trust incentivises borrowers to repay the credit irrespective of whether it is secured or unsecured. This invisible collateral for an individual can be used to reduce credit risk for the lender. Our analysis of existing Indian data shows some evidence of individuals signalling through not being dependent on individuals from their close network for funds despite the cost of borrowing being zero. The invisible collateral being a non-monetary cost derived from community can be helpful in designing policies like credit guarantee schemes. Moreover, imitation effect among individuals to default jointly affects this cost, leading to higher credit risk or NPAs. This information from the network should be considered while allocating credit. Therefore, the borrower's social status, such as strong ties, interconnectedness, the network they belong to, and so on, are

important dimensions that should be used while individuals involve themselves in informal contracts.

NOTES

- 1 In each interest rate range, the distribution of loans are given out of ₹1,000. For nine interest rate ranges, the total amount of loan in all interest rate range is ₹9,000. Therefore, the proportion of loan in a particular interest range and source is calculated out of ₹9,000.
- 2 Since all dependent variables are regional dummies, this test is equivalent to the ANOVA test to check variation of a continuous variable among groups.

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