

**Microcredit vs. Microsaving:  
Evidence from Indonesia**

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*First draft*

*Comments welcome*

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## **Abstract**

The rhetoric around microfinance creates a compelling picture: millions of poor and very poor households seek capital to build small businesses, but their lack of collateral restricts access to loans. Innovative “microbanks” meet the demand with more flexible collateral requirements and thus unleash untapped productive power. The narrative has driven the global expansion of microfinance and was highlighted by the Nobel Peace Prize committee in awarding the 2006 prize to Muhammad Yunus and the Grameen Bank of Bangladesh.

We examine household-level data from 1438 households in six provinces in Indonesia, another important early site for microfinance. The story that emerges differs in important ways from the narrative that dominates microfinance rhetoric. Loans for small business are important, but low-income households in the survey use loans for household needs about 30 percent of the time. Important non-business uses include paying for school fees, medical treatment, home repair or expansion, daily consumption needs, and social and holiday expenses. The finding holds for low-income households across a wide range: households below regional poverty lines, just above the lines, and well-above the lines.

All households in the survey, whether or not they were borrowing, were scored by staff of Bank Rakyat Indonesia according to their feasibility for taking BRI loans. The results show that creditworthiness increases with income, but the lack of collateral is a minor determinant of low creditworthiness. Nearly 40 percent of poor and very poor households were deemed creditworthy by professional examiners (in the sense that the borrowers are likely to be able to repay loans and maintain good standing), versus over 65 percent of non-poor households.

At all income levels, more borrowers were judged to be creditworthy than are currently saving or borrowing. About half of poor households that are creditworthy are averse to taking debt and do not seek credit; the incidence of debt aversion is relatively stable across income groups. The lack of collateral was cited as a deterrent by only about 10 percent of the households that are creditworthy but not borrowing from banks.

## **1. Introduction**

The rhetoric around microfinance creates a compelling picture: millions of poor and very poor households seek capital to build small businesses, but their lack of collateral restricts access to loans. Innovative “microbanks” meet the demand with more flexible collateral requirements and thus unleash untapped productive power. This narrative has driven the global expansion of microfinance and was highlighted by the Nobel Peace Prize committee in awarding the 2006 prize to Muhammad Yunus and the Grameen Bank of Bangladesh.

We examine data from Indonesia, another important early site for microfinance (Patten and Rosengard, 1991; Robinson, 2002). The survey covers 1438 Indonesian households in six provinces, completed by Bank Rakyat Indonesia in Fall 2002. The survey was undertaken by BRI as a way to map the financial landscape and gauge potential markets. The enumerators were BRI loan officers and other professionals, offering the unique chance to assess the creditworthiness of both customers and non-customers using the standard procedures applied by the bank. The survey also includes detailed information on assets, businesses, and economic and social changes. The experience of Bank Rakyat Indonesia (BRI), a publicly-owned commercial bank with a large microloan portfolio, has held an important place in assessing and rethinking experiences to date with microfinance, and the present paper uses the household survey to revisit claims made largely on the basis of administrative data and anecdotal evidence.

The story that emerges differs in important ways from the narrative that dominates microfinance rhetoric. Most important, loans for small business are important, but low-income households in the survey use loans for household needs about 30 percent of the time. Important non-business uses include paying for school fees, medical treatment, home repair or expansion,

meeting daily consumption needs, and contributing social and holiday expenses. The finding holds for low-income households across a wide range: households below regional poverty lines, just above the lines, and well-above the lines.<sup>1</sup> Despite the privileging of “microcredit for micro-enterprise” by donors, consumption credit appears as an important need, not as a secondary concern.

The evidence also sheds light on the creditworthiness of “unbanked” households, and on the roles of savings. With savings, households can build up assets to use as collateral, smooth seasonal consumption needs, self-insure against major shocks, and self-finance investments. It has been long assumed that households have informal means to save, and that these mechanisms can work quite well. But it remains unresolved why, if credit constraints are so problematic, households do not appear to save their way out of the constraints. Are households simply too impatient to save enough? Do households not have adequate surplus left over for saving after taking care of basic needs? The answers to both questions are plausibly affirmative, but the data suggest that there are many poor households that are creditworthy but not borrowing.

All households in the survey, whether or not they were borrowing, were scored by staff of Bank Rakyat Indonesia according to their feasibility for taking BRI loans. The results show that creditworthiness increases with income, but nearly 40 percent of poor and very poor households were deemed creditworthy by professional examiners (in the sense that the borrowers are likely to be able to repay loans and maintain good standing). At all income levels, more borrowers were judged to be creditworthy than are currently saving or borrowing.

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<sup>1</sup> The findings complement small-scale survey evidence on 53 households in three sample branches of Grameen Bank that show Grameen Bank loans, although nominally made for business purposes, often being re-directed toward non-business ends (Rutherford, 2006).

While much has been written on the potentially catalytic impact of giving legal title to assets (notably De Soto, 2000), the picture here suggests that the strongest claims are overplayed. The lack of collateral was cited as a deterrent by only about 10 percent of the households that are creditworthy but not borrowing from banks, and the professional assessments of the enumerators concur. The insight of Bank Rakyat Indonesia, as with most microlenders, has been to find better ways to lend against household income, not against assets. Collateral thus plays a much smaller role in determining creditworthiness relative to traditional banking approaches.

About half of poor households that are creditworthy are averse to taking debt and do not seek credit; the incidence of debt aversion is relatively stable across income groups and poses a further challenge to the notion that microcredit alone is a leading solution to poverty. In this case, the limit to credit is not only given by the lack of creditworthiness among parts of the population; the limit is also given by the fact that some worthy households simply don't want to borrow.

While the use of professional credit officers as enumerators was unique to the survey, the idea can be implemented in other settings and help to distinguish between demand-side and supply-side explanations for patterns of financial use.

## **2. The Indonesia Microfinance Access and Services Survey 2002 (MASS 2002)**

The survey was completed after the Indonesian economy had stabilized following the financial crisis of 1997-98. The Rupiah/US dollar exchange rate had risen from 2383 at the end of 1996 to over 10,000 during 1998. Inflation also jumped up: the consumer price index increased from

115 in 1997 to 182 in 1998. Inflation between 1999 and 2000 was about 10%, however, and the Rupiah has further depreciated, but not precipitously.

Without survey data, microfinance institutions often employ average loan size as a proxy for the average standard of living of borrowers (Dunford, 2002). It is a rough measure but easy to calculate. Figure 2 shows that average loan sizes at BRI had been steadily increasing until the financial crisis hit. The devaluation of the rupiah means that average loan sizes fell from US\$637 in 1996 to US\$140 in 1999, but the translation to dollars gives a misleading sense of purchasing power. In constant 1995 rupiahs, the fall has been by about one third, to an average loan size of just over 1 million rupiahs in 1999.

While the immediate circumstance surrounding the fall of President Suharto created further uncertainties, the transitions to Presidents Habibie and Wahid were mainly peaceful (outside of the several regions with secessionist movements). Thus, the end of 2000 had seen a year of relative calm for most citizens, and the survey respondents were again focusing on longer-term plans and investments. By 2002, the financial crisis was safely over, though the political scene remained charged.<sup>2</sup>

BRI collected the survey in the second half of July and the first half of August 2002, and it covers 1438 respondents in six provinces: West Java, East Java, West Kalimantan, East Kalimantan, North Sulawesi, and Papua. The provinces included 20.6 million households and 85 million people. The Rupiah-US Dollar exchange rate was roughly 9000 Rupiah per dollar on August 1, 2002.<sup>3</sup>

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<sup>2</sup> See Patten, Rosengard, and Johnston (2001) and Robinson (2002).

<sup>3</sup> Exchange rate is from Bank Indonesia. On August 1, 2002, the official sell rate was 9,564 Rp./\$; the buy rate was 8564 Rp./\$. Historical exchange rates are available at [www.bi.go.id/bank\\_indonesia\\_english/monetary/exchange/](http://www.bi.go.id/bank_indonesia_english/monetary/exchange/).

Two *kabupatens* (or *kotamadyas*) were selected in each, and from each *kabupaten/kotamadya* (rural regencies/urban municipalities), three *kecamatan* (sub-districts) were selected at random.<sup>4</sup> Likewise from each of these *kecamatan*, two *kelurahan/desa* were selected at random. Finally, respondents were chosen at random from local censuses. There was no attempt to over-sample bank customers, and the survey includes both customers and non-customers. The final survey covers roughly 20 households in each of 72 villages or urban neighborhoods. The results presented below are weighted to reflect the stratification by province and rural or urban district.

BRI initiated the survey to assess its impacts on clients and to gauge potential new markets. The enumerators were for the most part BRI loan officers, with quality checks and supervision by Jakarta-based BRI staff. Loan officers were not permitted to collect data in the regions in which they work to rule out biases due to collecting information on their own customers or potential customers.

The survey gives direct evidence on the living standards of households, avoiding the need for proxies. The survey includes direct information on wages and on enterprise revenues (but only allows a partial reckoning of the cost of family labor and the imputed cost of flows of services and depreciation of assets). The data are used to generate a measure of per capita income for each household, and that figure is compared to regional poverty lines.

The poverty rate for survey households is slightly higher than the official statistics for the country as a whole. For rural areas, the sample poverty rate is 26.3% versus 21.1% in the official

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<sup>4</sup> The *Kabupaten/Kotamadya* selected for this survey were: West Java: Kabupaten Purwakarta and Kabupaten Bandung; East Java: Kotamadya Madiun and Kabupaten Malang; West Kalimantan: Kotamadya Pontianak and Kabupaten Sanggau; East Kalimantan: Kabupaten Kutai and Kotamadya Samarinda; North Sulawesi: Kotamadya Manado and Kabupaten Minahasa; and Papua (Irian Jaya): Kotamadya Jayapura and Kabupaten Manokwari.

statistics. In urban areas, the comparison is 18.3% versus 14.5%. There is considerable debate about setting poverty lines in Indonesia, and we use the official measures as a benchmark.

Assuming a 30-day month and converting at official exchange rates, the national-level poverty lines are 36 cents per day in rural areas, and 48 cent per day in urban areas.<sup>5</sup>

### **3. Beyond microcredit for micro-enterprise**

The idea of microcredit has been closely bound with the desire to promote micro-enterprise, the small businesses of low-income households. Many of the businesses are so small that they employ no one but the proprietor. Muhammad Yunus's vision in building Grameen Bank was to reduce poverty by helping borrowers expand their small enterprises. Marguerite Robinson (2001, ch. 3), while disagreeing with Yunus at key points, also maintains the sharp focus on lending for micro-enterprise. In drawing on the experiences of clients, a stream of anecdotes stress the way that credit helps small businesses grow, taking examples from countries that include the Philippines, Indonesia, Senegal, Nicaragua, Kenya, Argentina, and the Kyrgyz Republic (e.g., pp. 107-120). By helping to build micro-enterprise, it is hoped, microcredit can expand production and generate income for borrowers.

But Table 1 shows that half of the poor borrowers are taking loans for purposes unrelated to business. The data give the stated use of the last loan taken from each source; since some households borrow from more than one source, the percentages sum to over 100 percent. For borrowers above the poverty line, the percentage borrowing for business rises to 55-47 percent,

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<sup>5</sup> Province-level data are calculated by Statistics Indonesia (Badan Pusat Statistik) drawing on the 2002 SUSENAS Survey. There was no price survey for 2002 in Papua, so the poverty line here is the 2001 line increased by the average urban (+30%) and rural (+20%) increases between 2001 and 2002 for all Indonesia.

with 35-35 percent of households borrowing for household uses. Purposes include home improvement, non-business land or building purchase, school tuition, medical treatment, loan repayment, meeting daily needs or retirement needs, vehicle purchase, buying household goods, ceremony or social expenditure, holiday needs, or jewelry purchase.

Part of the explanation rests with the fact that only about 70 percent of households operate a family enterprise. The bottom panel of Table 1 shows, not surprisingly, that borrowing for business is more likely if a household has a business. But even then, roughly one quarter of households are still borrowing for household purposes.

Since only about one third of the sample borrows (and only 14 percent of poor households), cell sizes are small; the total sample of borrowers is just 549. Cell sizes are even smaller in Table 2, where the uses of loans is disaggregated by the source of the loans. With due caveats, the table shows roughly the same patterns as Table 1 for borrowers from Bank Rakyat Indonesia: just 55 to 64 percent of borrowers take loans for business purposes. The table also includes data on borrowers from other formal banks, from “microfinance” institutions (defined to include credit unions and cooperatives and other banking institutions that are neither fully commercial nor “informal”), and from the informal sector. The rows on BRI pertain to its “unit” program, a branch that focuses on microfinance for low-income households.

The bottom panel shows that most loans from the informal sector are not taken for businesses. This final piece of evidence makes plain the empirical leap embodied in a line commonly heard in defense of the relatively high rates of interest charged by microfinance institutions. Helms and Reille (2004), for example, compare microfinance services to “informal credit markets (such as local moneylenders), which are even more expensive.” Table 2, though, shows that loans from informal credit markets are used for broadly different purposes than loans

from the formal sector. A larger data set is needed to address the comparison with confidence, but the data in Table 2 suggest that BRI loans and moneylender loans are not obvious substitutes; thus, comparing prices across sources can mislead.

A final piece of evidence comes from households that are not currently borrowing from “formal” banks (including the BRI units). Households were asked their favored uses for loans, were they to borrow from a formal bank. Table 3, with a sample size of 1028, yields results on prospective loans that follow the results on actual loans in Tables 1 and 2. Again, most loans are to be used in support of business, but a large share (31 to 44 percent) of loans are marked for non-business purposes.

#### **4. Poverty, credit access and demand**

The propensity to borrow increases with income and assets. Table 4 shows that the probability of borrowing rises steadily from 14 percent for poor households to 31 percent for non-poor households with per capita income up to three times the poverty line. Over half of better-off households borrow.<sup>6</sup>

In this sample, one quarter of the borrowers from the microfinance institutions and the informal lenders are below poverty lines. The distribution of their borrowers tilts toward the poor, and under 10 percent of the best-off households borrow from them. In contrast, just 10 percent of BRI unit borrowers are poor in this sample, and their customers tilt toward the high-end. But BRI is large, and, among poor households, it serves nearly as many customers as do the other “pro-poor” microfinance banks and the informal lenders combined. Table 4 shows that among 69 poor borrowers, 46 percent have taken loans from a BRI unit.

One motivation that drove BRI to collect the survey was to identify untapped markets. To that end, the survey took advantage of the fact that most enumerators were credit officers (*mantri*) participating in a different region than their usual place of employment. At the end of the survey, the enumerators were asked to use their professional judgment to evaluate the given household. The evaluation was not shared with the household. The specific question focused on the household's potential credit-worthiness with respect to borrowing from BRI—with BRI's existing line of loan products and processes. The enumerators were also asked about the amount of credit and the term of credit worth giving, as well as reasons that the household was not worthy to receive credit.

The hypothetical loans (which are characterized explicitly as part of the bank's KUPEDES program), are offered at commercially-viable fees. At the time of the survey, the BRI units charged 2% per month for the loans, irrespective of size, making an annual effective interest rate of about 40%. In practice, though, roughly 90% of borrowers get part of their interest costs back in the form of a rebate. If borrowers make all of their payments within a six-month period in a timely manner, they get back 0.5% per month, making the net annual effective interest rate about 32%. Otherwise, the 0.5% is kept by the bank as a penalty. While BRI requires collateral, the bank seldom takes legal action to take possession (except in cases of suspected fraud). Loan officers are fairly flexible in what they will accept as collateral, but they typically choose property or vehicles. Previous BRI surveys show that about 90% of Indonesian households have assets that would qualify as collateral, and the requirement is not viewed by the bank as a major block to depth of outreach.<sup>7</sup>

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<sup>6</sup> The result drives the regression output in the first column of Table 6, where income strongly correlates with borrowing after controlling for region, household characteristics, and assets.

<sup>7</sup> *Introduction to BRI's Unit Banking System*, P. 7. Jakarta: BRI.

Table 5 gives the data on creditworthiness with regard to the hypothetical loans. Many more households were deemed creditworthy than are actually borrowing from formal lenders. The survey found that 6 percent of the poor households in the sample had taken loans from BRI. The percentage grows to 18 percent for the sample above the poverty line but with less than three times the poverty threshold. In the top income category, 39 percent are BRI borrowers. The enumerators deemed that instead 38 percent of households on the bottom end were feasible borrowers from BRI, 65 percent in the middle group, and 83 percent at the top.

The enumerators identified credit-worthy households far down the income ladder, and the results suggest the difficulty in making blanket statements about the poor and their opportunities. Muhammad Yunus has argued that credit is a “human right” even for the poorest, suggesting an imperative to make lending universal. Others, like Robinson (2001, p. 21), have argued that the very poor are likely to be ill-suited for commercial borrowing, a result echoed in the determination by enumerators here that 62 percent of the poor households in the sample would not be good prospects for borrowing. On the other hand, the enumerators identified 38 percent of poor households that would be viable borrowers—given BRI’s existing loan products and processes. Even at levels of per capita income under half the official poverty line, enumerators identified 36 percent of households as creditworthy. The evidence suggests that views on lending to the very poor deserves nuance.

The larger question is not whether a substantial group of borrowers (well-) below poverty lines is potentially creditworthy—the evidence suggests it is, if those households can be cost-effectively identified and served. The question is instead a supply-side question: can they be served within the constraints of an institution’s business/social model. The enumerators spent as much as an hour and a half with the customers in their homes before making their judgments,

time that would not normally be permitted. They assessed the households on the basis of the ability to repay loans on time, not on whether the loan would be particularly profitable. All else the same, making small loans is less profitable than making larger loans when fixed costs per loan are large. The results should thus be tempered by the fact that although the households may be creditworthy, lending to them with given products and prices may be neither efficient nor profitable.

The enumerators responses also shed light on the role of collateral. Hernando De Soto (2000) argues strongly that the lack of legal title to assets is holding back the progress of the poor. His argument hinges on the ability of title to transform assets into collateral and thus to secure capital, ultimately generating income for the poor. Without title, De Soto argues, the capital is “dead”: unhelpful in generating the leverage needed to climb from poverty.

The regression in Table 6 shows that income and assets correlate strongly with borrowing status and with being judged creditworthy by the enumerators. The second column, on creditworthiness, though, shows that the share of assets under title has no statistically significant impact. The coefficient is the same size as in the borrower status regression in the first column, but is measured with little confidence. Given that endogeneity would likely bias the coefficient upward, the result lends little support for De Soto’s strong thesis. Assets matter, but the role of title is less clear.

The (lack of) a clear finding is supported by the enumerator’s own assessments. The enumerators were asked why they rejected the given households, and Table 7 shows that 81 percent of the time, the reason given with regard to poor households centered on deficiencies in the household’s income or business. Less than 2 percent of the time was a lack of security or poor character highlighted. The result highlights the insight that microlenders like BRI have

developed ways to lend against expected household income flows (and their confidence in being able to time installments to cash flows), not against assets. By focusing on the traditional banking mode of lending against assets, De Soto is too pessimistic about prospects for spreading banking to a large share of the poor. On the other hand, he is also too optimistic. If the problem of lack of creditworthiness for the 62 percent of “rejected” poor households is a deficiency in income or business, the problem will be far harder to overcome than implementing a titling program.

## **5. Saving and debt aversion**

By the end of 2005, Bank Rakyat Indonesia served 3.3 million low-income borrowers and over 32.3 million low-income savers.<sup>8</sup> Given the mountain success stories of borrowers who have grown their businesses through micro-loans, it is tempting to assume that the 29 million households that opt not to borrow are not creditworthy. Marguerite Robinson (2001, p. 22) describes a process of graduation to borrowing that makes the view plausible:

Some households start extremely poor and gain employment. They may then open small savings accounts. Some households with savings accounts then add small loans...Some clients are able to expand and diversify their enterprises and to qualify for larger loans.

The depiction might suggest that the households that are saving at institutions like BRI are not borrowing because they are not yet in a position to do so.<sup>9</sup> It further suggests that those who save but do not borrow are likely to be poorer than those who borrow, and that it is on the saving side that BRI achieves its greatest social outreach.

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<sup>8</sup> Data for 2005 are from the BRI International Visitor’s Program, <http://www.ivpbri.com/profile.php>.

<sup>9</sup> This view is not being ascribed to Robinson. Robinson (2001 and 2002) provide richly descriptive sources on microfinance in Indonesia.

Some of this is true. BRI has more poor savers than poor borrowers, as Figure 3 bears shows. But Figure 3 also shows that there are more creditworthy households than current savers, so that outreach via borrowing remains a potential frontier. Table 8 (and the regression in the third column of Table 6) show that the propensity to have a savings account rises with income, as does the propensity to borrow. The two findings together yield in the bottom panel of Table 8 that the fraction of households that save but do not borrow falls with income. An equivalent regression is shown in column 4 of Table 6, yielding little power to explain the propensity to save but not borrow.

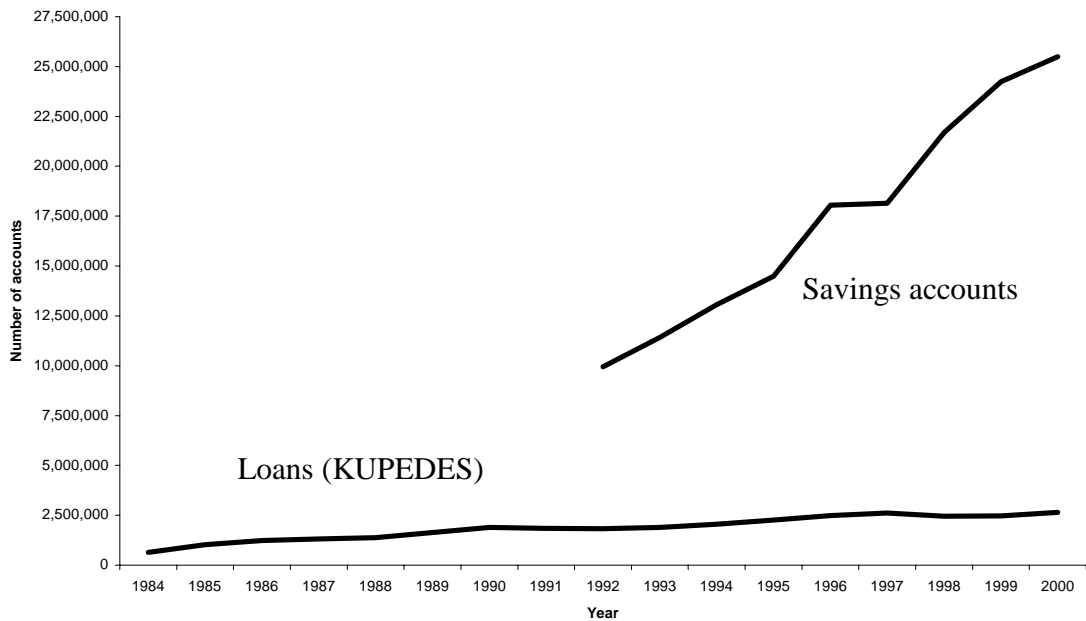
Table 8 shows that among the households that save but that do not borrow, most are in fact creditworthy and most are not poor. Why then don't they borrow? Among poor households, one quarter of savers (about half of the creditworthy non-borrowing savers) are creditworthy but report that they do not borrow because they are averse to debt. The prevalence of debt aversion challenges the view that microcredit is the sword that will free all poor households from poverty. The incidence of debt aversion (conditional on being creditworthy) is only weakly related to income and assets, and suggests a limit to microfinance as a policy tool.

## **Conclusion**

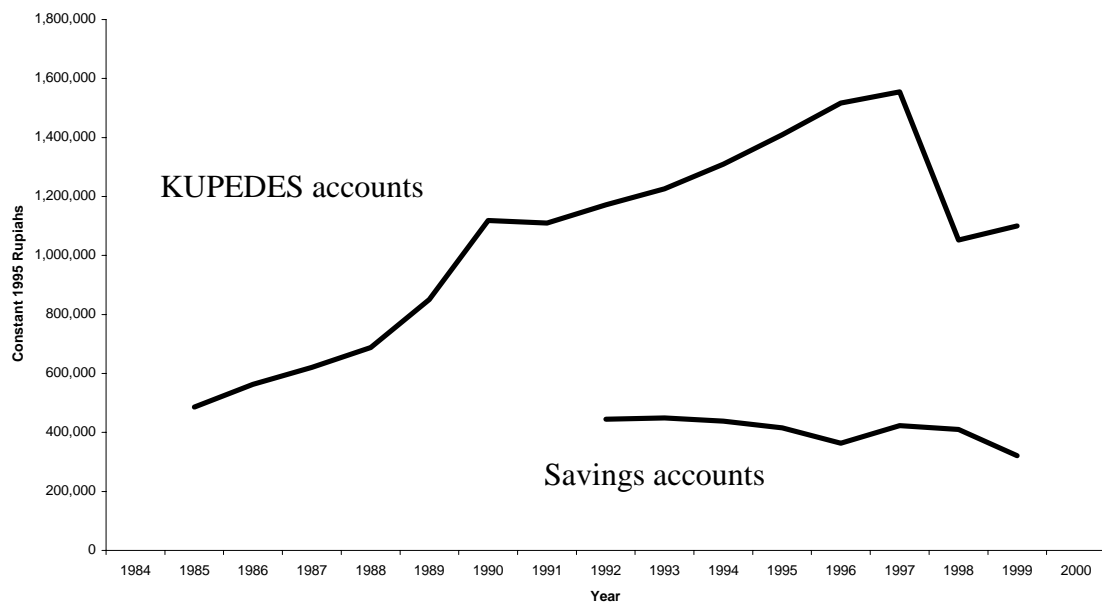
[To be added]

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**Figure 1: Bank Rakyat Indonesia. Numbers of borrowers and depositors, 1984 – 2000.**



**Figure 2: Bank Rakyat Indonesia. Average size of loans and deposits**

**Table 1: Loan uses**

**Uses of loans (percent) of households within income groups that took loans for business, household, and other purposes**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>
<i>Loan use</i>			
Business	49	55	57
Household	35	43	45
Other	23	6	7
Observations	69	208	271
Household enterprise?	73	70	69
<i>Loan use if household has enterprise</i>			
Business	57	70	71
Household	27	26	32
Other	16	6	7
Observations	55	145	168

Source: MASS 2002. Loan uses sum to over 100 percent within income groups since some households take loans from different sources for different purposes. Uses are for the last loan taken from each source. Loans for business include those used for working capital of existing venture, Diversify income, starting a new business, purchasing new equipment, new business infrastructure (e.g., store or warehouse), or business infrastructure improvement. Loans for the household include home improvement, non-business land or building purchase, school tuition, medical treatment, loan repayment, meeting daily needs or retirement needs, vehicle purchase, buying household goods, ceremony or social expenditure, holiday needs, or jewelry purchase. Other uses are described as “other” by respondents.

**Table 2: Loan uses by institution**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>
<i>BRI Unit borrower</i>			
Business	55	64	60
Household	9	30	31
Other	36	6	8
Observations	27	104	173
<i>Other bank borrower</i>			
Business	74	44	25
Household	25	55	75
Other	1	1	1
Observations	10	41	82
<i>Microfinance borrower</i>			
Business	47	51	63
Household	47	40	22
Other	6	10	15
Observations	20	40	27
<i>Informal borrower</i>			
Business	17	15	47
Household	63	83	38
Other	20	2	15
Observations	18	36	23

Source: MASS 2002. See notes to Table 1 on loan uses. “BRI Unit Borrowers” have taken loans from the microfinance arm of Bank Rakyat Indonesia. “Other bank borrowers” have taken loans from other “formal” sources including the BRI branch offices, Bank Central Asia (BCA), Bank BNI, a local development bank, Bank Danamon, Bank Mandiri, Bank Bukopin, a Sharia commercial bank, other private commercial bank, Bank Perkreditan Rakyat (BPR), or a Sharia rural bank. “Microbank” borrowers have borrowed from a rural credit agency (BKD/TPSP/LDKP), credit union/cooperative, rural unit cooperative (KUD), BMT/BMM Islamic institution, “market bank,” local financing institution, or government bureau. “Informal” sources include Pawnshop service, joint venture, a self-managed institution, professional moneylender, family/relative/friends, or other informal source.

**Table 3: Desired loan uses if access to formal bank loan**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>
<i>Desired loan use</i>			
Business	69	69	56
Household	24	26	39
Other	7	6	5
Observations	278	465	285

Source: MASS 2002. See notes to Table 1 on loan uses.

**Table 4:**  
**The distribution of borrowers within income groups**  
**(percent)**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>	<b>All</b>
Borrower?	14	31	57	32
Observations	330	617	485	1432
<i>Among borrowers:</i>				
Bank Rakyat Indonesia	46	60	68	62
Other formal banks	11	14	33	22
“Micro” banks	26	20	8	15
Informal finance	25	15	9	14
<i>Sum</i>	<i>108</i>	<i>109</i>	<i>118</i>	<i>113</i>
Number of borrowers	69	208	271	549

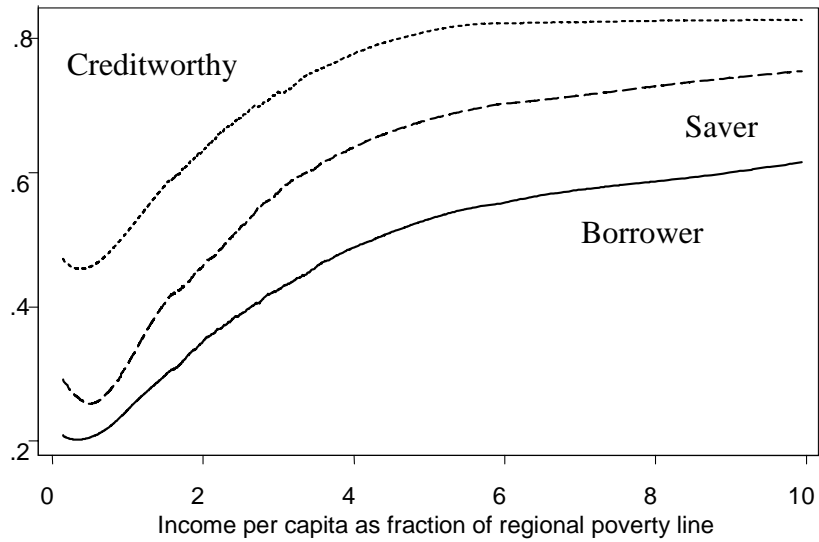
Source: Mass 2002 survey. See Table 2 on institutional categories.

**Table 5: Creditworthiness**

**Enumerator's assessment of whether household would be appropriate  
for a loan from a BRI unit**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>
Creditworthy	38	65	83
Currently borrowing from BRI	6	18	39
Observations	330	617	485

Source: MASS 2002. See notes to Table 1 on loan uses.



**Figure 3: Likelihood of being judged creditworthy, being a borrower, and using a savings account or device**

**Table 6:**  
**Determinants of saving and borrowing**

	Dependent variable:			
	Borrower	Feasible	Saver	Saver only (conditional on saving)
Per capita income	$2.3 \times 10^{-7} **$	$2.4 \times 10^{-7} **$	$2.6 \times 10^{-7} **$	$6.3 \times 10^{-8}$
Per capita income squared	$-3.3 \times 10^{-14} **$	$-2.6 \times 10^{-14} **$	$-3.4 \times 10^{-14} **$	$1.4^{-14}$
Fixed assets	$6.0 \times 10^{-10} **$	$1.1 \times 10^{-9} **$	$1.5^{-9} *$	$2.1^{-10}$
Fixed assets squared	$-6.9 \times 10^{-19} **$	$-9.9 \times 10^{-19} **$	$-1.29 \times 10^{-18} *$	$-2.9 \times 10^{-20}$
Share of assets with legal title	0.20**	0.20	0.23**	-0.03
Share of assets with other documents	0.03	-0.11*	0.07	0.08
Household age	0.002*	-0.0002	0.002*	-0.003
Household education	0.02**	0.01**	0.03**	-0.005
Household size	0.02**	0.008	0.02**	-0.004
Adjusted R <sup>2</sup>	0.14	0.18	0.28	0.05
Observations	1393	1370	1393	703

\*\* (\*) Statistically significant with 95% (90%) confidence. OLS regression includes fixed effects for district (*kabupaten/kotamadya*).

**Table 7: Reasons for lack of creditworthiness (percent)**

	Below poverty line	Per capita income is 1 to 3 times the poverty line	Per capita income is more than 3 times the poverty line
Security deficient	1.9	3.6	3.9
Income deficient	81.3	78.1	68.4
Poor character/history	1.7	0.3	0.04
Administrative problems/other	15.1	18.0	27.7
Observations	168	215	81

Reasons articulated by enumerators' professional and confidential assessment of creditworthiness.

**Table 8: Saving behavior within income groups (percent)**

	<b>Below poverty line</b>	<b>Per capita income is 1 to 3 times the poverty line</b>	<b>Per capita income is more than 3 times the poverty line</b>
Has a saving account or device	15	43	72
BRI account	10	22	34
Any formal account	11	32	56
Microbank account	2	6	7
Informal saving	2	4	6
<i>Among savers:</i>			
Save but do not borrow	62	45	28
-- Creditworthy?	46	66	86
-- Creditworthy but averse to debt	24	26	55
Observations	330	617	485

Reasons articulated by enumerators' professional and confidential assessment of creditworthiness.