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USE OF FINANCIAL INSTRUMENTS IN RURAL THAILAND

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Use of Financial Instruments In Rural Thailand*

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Abstract

This paper presents a summary of financial access in rural Thailand. We find that household use an important variety of financial instruments and at the same time, there is a lot of heterogeneity at the province level. Additionally, a credit program implemented in 2002, increased the number of household with access to formal borrowing and decrease the importance of informal borrowing. During the whole period we observe a high correlation between wealth and financial access, interestingly, household that borrow informality are poorer than the household that do not borrow at all and household that borrow from commercial banks are the richest.

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1 Introduction

In this document I summarize the use of several financial instruments in Rural Thailand. I use an extensive data set that contains information for 8 years for households living in the provinces of Chachoengsao, Lopburi, Sisaket and Buriram in Thailand. The objective of this document is to act as a big summary of data that serves as input for research in this topic, but we are not interested in testing any hyphotesis in particular. However, we characterize the individuals that start to save and start to borrow during this 8-year period. At the same time, we summarize the use of this new savings and amount borrowed.

The data available allow us to analyze changes in the use of several financial instruments. For instance, we describe changes in formal borrowing and informal borrowing, at the same time we observe changes in remittances and lending. The main findings of this summary are the important changes in financial access that are found after the introduction of a massive increase in funds available at the village level. In 2002 the Thai government started a Million Bath Fund that dramatically changed the trends previously observe in the data. Interestingly, not only borrowing increase, but also savings.

Additionally, for the whole period we find that wealth is closely related to financial access, households with access to commercial banks are the richest and households have access to informal borrowing are the poorest.

In the first section of the document we provide a brief introduction and document the main findings. In the second section I describe the data. In the third section, I describe the frequency of use of different financial instruments, I also show figures for each province and by several instruments separately. .In the fourth section I show the relationship between wealth and formal and informal borrowings and savings. I briefly conclude in the fifth section.

2 Data

Alem and Townsend (2009) describe the data in the following way: "The panel data used in this paper come from a project funded by the National Institutes of Health, the National Science Foundation, and the Ford Foundation (see Townsend et al, 1997). An initial cross-sectional survey, with retrospective data, was fielded in May, 1997, before the crisis that began with the devaluation of the Thai baht in July, 1997. Two regions were chosen deliberately, namely, the more developed Central region and the relatively poor, semi-arid Northeast. Within each region two provinces were chosen deliberately as each had at least one county (amphoe) that had been randomly selected in all previous rounds of the larger Socio-Economic Survey (SES). In the Central region the province of Chachoengsao is adjacent to Bangkok and contains an industrial corridor that makes its way to the eastern seaboard. The province of Lopburi is in the fertile central valley north of Bangkok. In the Northeast, the province of Sisaket is the poorest in Thailand according to provincial product data, and Buriram, also in the Northeast, represents a transition province as one moves west back toward Bangkok.

Within each province twelve tambons or sub-counties were chosen at random (see Binford, Lee, and Townsend, 2004). Within each tambon, four villages were chosen at random from an enumeration of villages available from the Community Development Department (CDD), and within each village fifteen households were chosen at random from a listing held by the headman. In addition to the household questionnaire, survey instruments were designed for the headman of each village, soliciting in particular a retrospective village history of the use of formal and quasi-formal financial institutions.

With the advent of the crisis, funding from the Ford Foundation allowed a resurvey one year later, in May, 1998, of one-third of the original sample, and this was continued with NICHD funding into subsequent years, and the data we use in this paper is through 2001. For this Townsend Thai resurvey panel, four tambons were chosen at random from the original twelve of each province.3 Otherwise, the same villages and the same households were selected for re-interviews. The target number of households was 960, or 240 in each province".

3 Use of Financial Instruments

We are going to study the evolution in the use of different financial instruments in Thailand. In order to do this we selected the following instruments:

Capital Markets: Interest on savings, proceeds from ROSCA , dividends, payments for renting land, income from Roomers and Boarders

Formal Borrowings: Includes borrowing from the Thai Bank for Agriculture and Agricultural Cooperatives (BAAC), Production Credit Groups (PCG), commercial banks, agricultural cooperatives, rice banks and village funds.

Borrowing form the BAAC is also analyze separately.

Informal Borrowings: Includes borrowing from a relative, neighbor, store owner, landlord and money lender.

Formal Savings: Includes savings in BAAC, agricultural cooperatives, PCG, commercial banks and rice bank.

Lending: Income from loan repayments

Additional instruments we consider are: Remittances, Livestock, Rice Storage. and Household Assets.

It is important to mention how we measure use of financial instruments. In the case of capital markets, lending, remittances is simply weather the household recorded one of those activities during the year. For borrowing, formal or informal, we consider that a household used borrowings if $B_t - rB_{t-1}$ is different from zero. In the case of savings, we define that a household used savings if $S_{t-1} - S_t$ is different from zero, this is, if the amount of savings in the account changed from one year to the next one, the same definition is used for livestock, rice storage and household assets. We are looking at the percentage of household that recorded use of these instruments.

In 2002 the Thai Government started a program to increase access to credit in Thailand. The program was a transfer of a million bath (close to 250.000 US$) from the central government to several agencies in rural Thailand, among them the BAAC. Villages would organize and present projects to be funded by this new program, this created village funds that administered the money. The program is know as the Million Bath Village Fund. More details can be found in Kaboski and Townsend (2009).

Table 1 shows the use of these instruments in Thailand. We are looking at the percentage of household that recorded use of these instruments.

Table 1: Use of Financial Instruments

Central North East

Year	1997	1998	1999	2000	2001	2002	2003	2004
use_cap.mar	34.7%	32.8%	29.8%	24.8%	24.3%	22.6%	37.5%	45.3%
use_formal_bor	32.1%	30.8%	34.5%	36.6%	36.7%	69.0%	74.4%	74.7%
use_baac_bor	23.7%	23.2%	25.7%	28.4%	27.2%	20.2%	20.7%	25.4%
use_bor_pcg	0.6%	0.7%	1.3%	1.4%	3.2%	5.3%	5.6%	7.4%
use_bor_coop	6.5%	6.6%	7.7%	6.7%	6.3%	8.3%	5.7%	7.5%
use_bo_comBank	1.0%	0.6%	0.8%	1.1%	0.9%	1.2%	0.9%	0.5%
use_bor_Vfund	0.8%	0.5%	1.3%	1.1%	0.7%	59.1%	66.6%	65.1%
use_informal_bor	21.4%	36.1%	41.8%	36.1%	32.8%	30.6%	25.6%	24.5%
use_inf_bor_Mlend	6.1%	9.8%	12.1%	10.4%	9.8%	10.1%	8.1%	7.0%
use_inf_bor_neigh	4.6%	7.7%	8.7%	5.9%	3.2%	3.3%	2.4%	2.0%
use_inf_bor_rela	8.8%	17.5%	22.9%	20.8%	18.0%	16.0%	11.9%	9.3%
use_inf_bor_sown	2.0%	6.3%	6.5%	4.3%	5.2%	5.6%	5.9%	8.1%
use_other_bor	4.7%	7.9%	10.2%	11.9%	17.0%	29.3%	20.6%	25.0%
use_savings		66.6%	53.7%	54.7%	52.6%	61.9%	54.8%	54.1%
use_sav_baac		34.0%	29.1%	29.6%	24.4%	24.8%	17.7%	17.7%
use_sav_comBank		33.8%	23.3%	21.9%	18.7%	17.8%	12.3%	13.0%
use_sav_pcg		6.3%	5.6%	9.2%	16.2%	37.3%	34.3%	35.1%
use_sav_coop		13.9%	8.6%	7.1%	5.9%	6.4%	4.7%	4.3%
use_lend	12.4%	20.6%	22.8%	23.3%	22.2%	19.8%	19.7%	19.2%
use_rem	38.5%	47.5%	48.6%	61.4%	58.3%	58.7%	62.7%	64.1%
use_live.St		43.3%	40.4%	38.8%	38.3%	41.7%	43.8%	44.3%
use_rice.St		59.6%	60.0%	61.1%	63.2%	64.3%	61.8%	62.7%
use_HHassets		31.1%	43.3%	45.0%	49.4%	52.4%	57.3%	58.7%

We can separate the instruments according to their trends:

Increasing:

Formal Borrowing, increased until 2001 and specially in 2002 due to village funds.

Remittances, showing a big increase in 2000.

Household assets, an increment of 27 percentage points during the whole period.

Stable:

Borrowing form the BAAC: there is an small increase from 1997 to 2000 and then an small decrease.

Lending, despite the growth from 1997 to 1998, after that the number were stable.

Livestock, here a reduction can be observed until 2001, to recover from then on.

Rice storage, maybe a little increase can be observed, until 2002, but there is a downturn in 2003.

Decreasing:

Informal borrowing, after an increment until 1999, decreased monotonically.

Special case:

Capital Markets, a reduction of 12 percentage points from 1997 to 2002 was compensated by an increase of 15 percentage points in 2003.

Formal savings, they show a decrease till 2001, to increase in 2002 possibly due to village funds, but to decrease again at the end of the period.

We can also see that some trends that we find in the whole sample could be the result of very different trends in each province or it could be that there is a common trend. So we will compare the trends of the whole sample with the trends for each province.

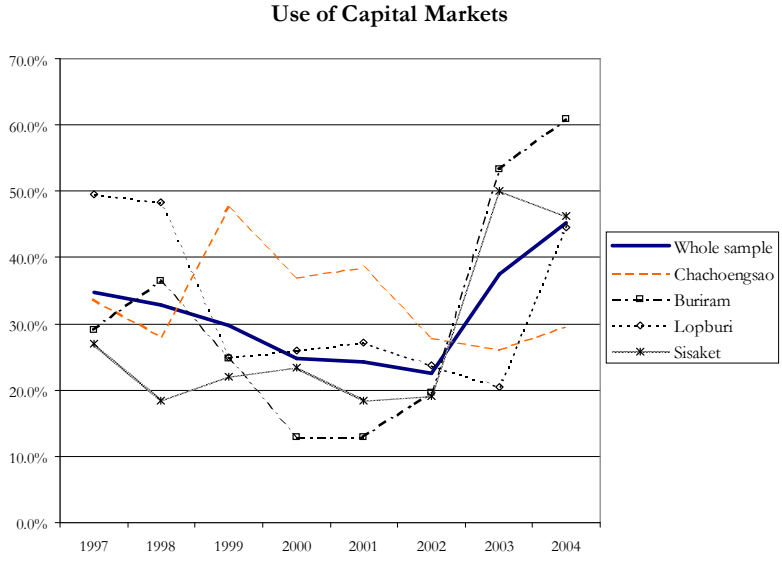
The instruments that show the same trend are: Formal Borrowing, Informal Borrowing, Formal savings, Livestock, Rice storage, Household assets. The instruments that have different trends across provinces are: Capital Markets, BAAC,Lending, Remittances

Next, we analyze the use of each instrument separately:

Capital markets: The sample trend for use of capital markets shows a decline form 35% in 1997 to 23% in 2002, but a big recovery in 2003 to a 38%.

This trend can be seen also only in Buriram, but the other provinces show their own trend and only in Buriram and Sisaket we can observe a big jump in 2003. The trend for the whole sample does not coincide with the trends per province.

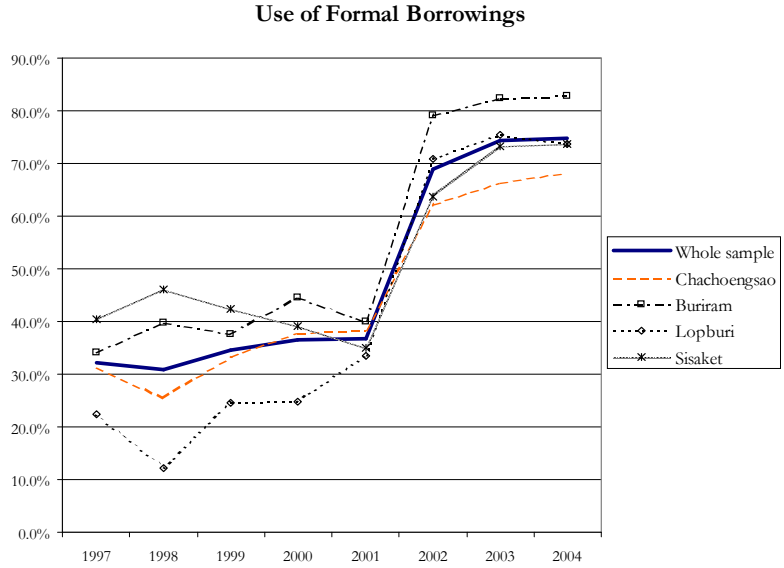
Figure 1: Capital Markets, by Province



Formal borrowing: For the whole sample there was an steady increase form a 32% in 1997 to a 37% in 2001, with also a big increase in 2002 to a 69%.

A similar trend can be found in Chachoengsao, Buriram and Lopburi, but in Sisaket the use of formal borrowing was declining until 2001. In 2003 the four provinces showed a big increase in the use of formal borrowing due to the village fund policy.

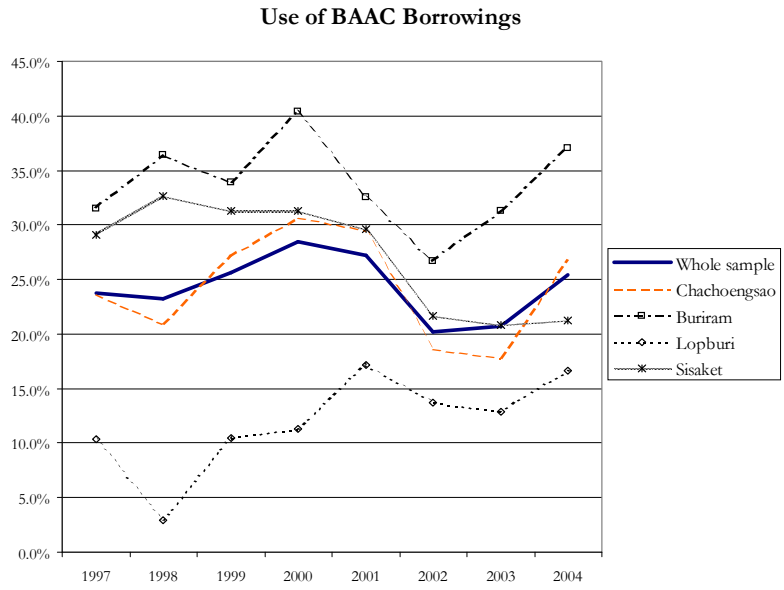
Figure 2: Formal Borrowings, by Province



BAAC Borrowing: The numbers for the BAAC are stable in the whole sample, showing an increase form 1997 to 2000 (23% to 28%) and then declining until 2003 (26%) to recover in 2004 (25%).

Chachoengsao has the same trend, but the others villages have different patterns, showing also greater variability. In Sisaket there is a decline in the use of the BAAC, in Buriram there is a peak in the year 2000, then decreases in 2001 to recover later. In Lopburi there is a peak in 2001 and then declines.

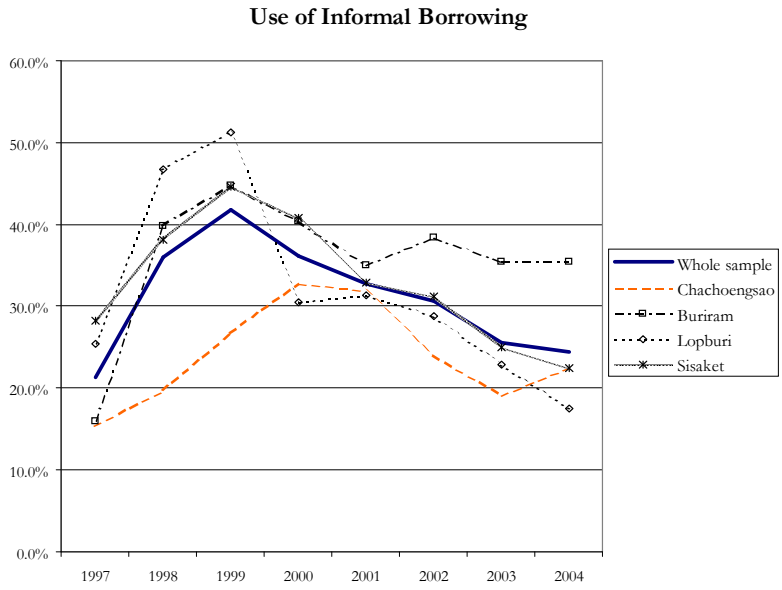
Figure 3: BAAC borrowings, by province



Informal borrowing: For the sample there is a maximum in 1999 (42%) and then a decline in the use to reach 25% in 2004.

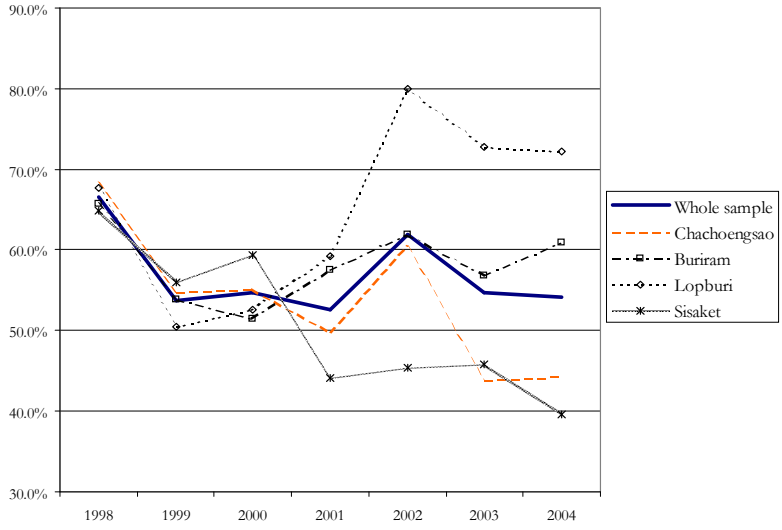
A similar trend can be found in Buriram, Lopburi and Sisaket. In Chachoengsao the only difference is that the peak is in 2000, but the trend is similar.

Figure 4: Informal Borrowing, by Province



Formal Saving: The pattern for the whole sample is similar for 3 of the 4 provinces, a decrease until 2001, then an increase in 2002, to decrease again, however, in Sisaket the increase in 2002 is very small.

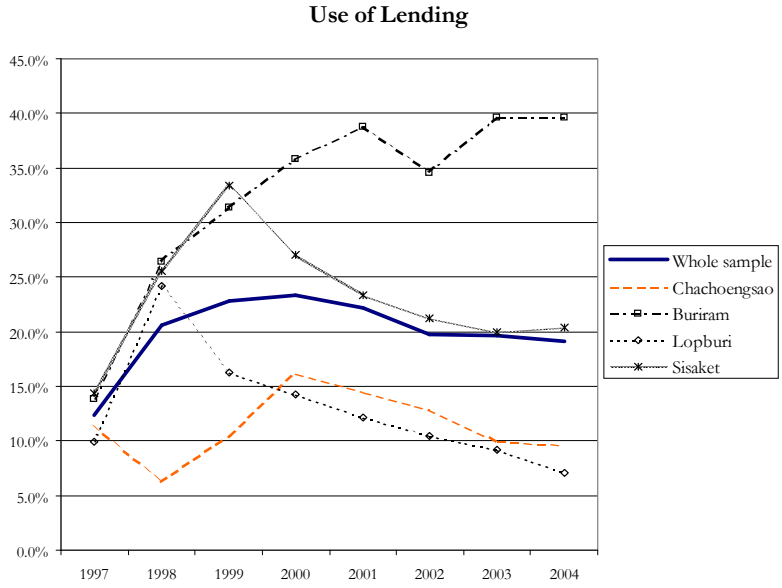
Figure 5: Formal Savings, by Province



Lending After the increase in 1998, very stable numbers are found, a small increase from 1998 to 2000 (21% to 23%) and then a decline until 2004 (19%)

At a province level we a similar pattern Sisaket, but with bigger fluctuations. Buriram shows an increase in the use of lending and Lopburi shows a big decline in the use of lending for the whole period. It is clear that the numbers for the whole sample don't show the heterogeneity across villages.

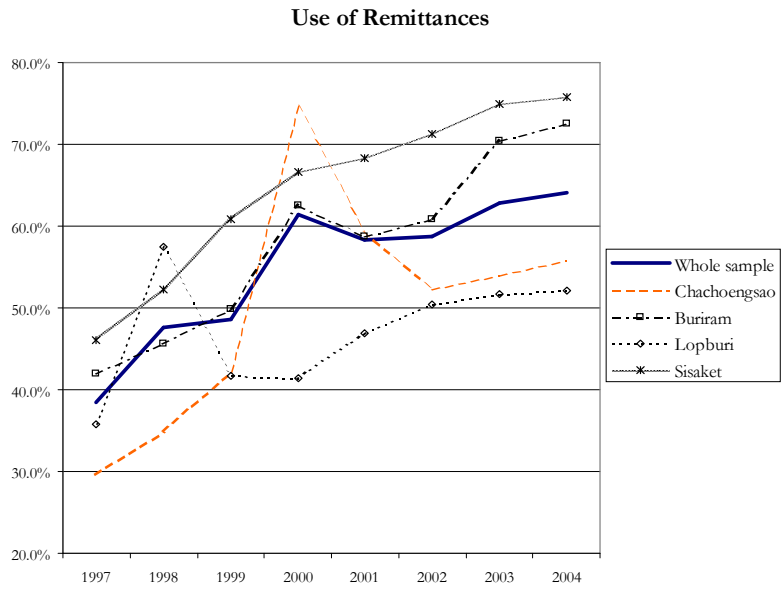
Figure 6:Lending, by Province



Remittances: An overall increase can be appreciated and two periods with two different levels, one from 1997 to 1999 the other from 2000 to 2004, with less growth.

Buriram has very similar trend, but a bigger increase in 2003. Chachoengsao has a maximum in 2000, but then decreases. Lopburi shows also a different trend, first decreasing from 1998 to 2000 (58% to 41%) and then increasing until 2003 (52%), finally Sisaket shows a monotonic increase in the use of remittances. We can see in general, each province has a different behavior.

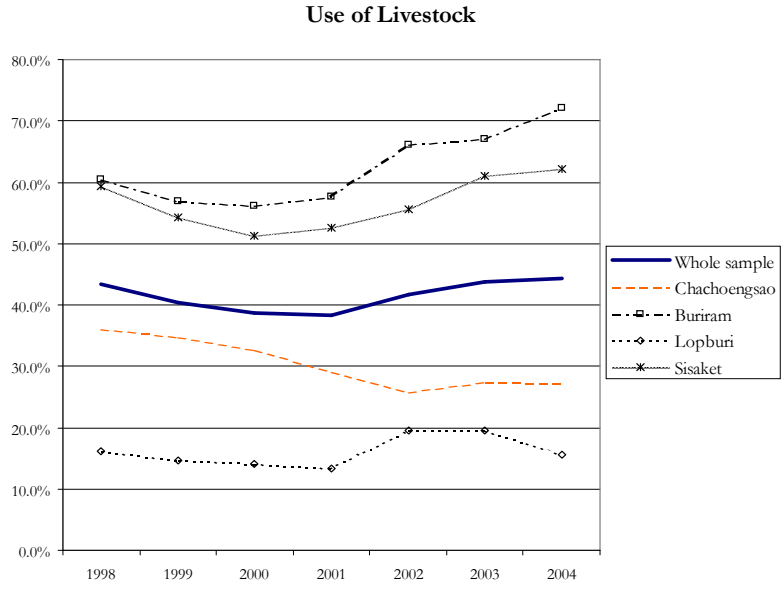
Figure 7: Remittances, by Province



Livestock: A U-shaped curve can be seen for the whole sample, starting with a 43% in 1998, decreasing to a 39% in 2001 and recovering to a 44% in 2004.

The U-shaped curve tends to appear in two villages (Lopburi and Buriram), but is not the case of Chachoengsao and Sisaket.

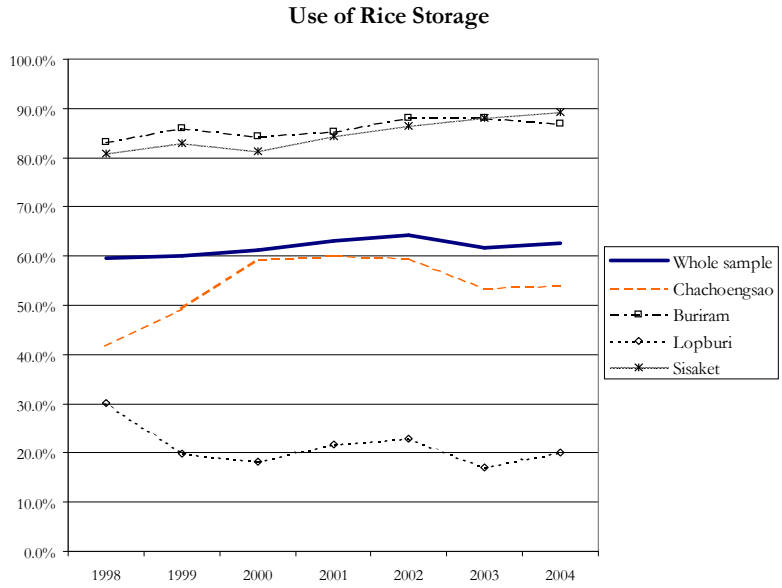
Figure 8: Livestock, by Province



Rice Storage: The whole sample trend is an increasing one until 2002 (60% to 64%), but then there is an small decrease.

We can see that the decrease in 2003 is due to a decrease in Chachoengsao and Lopburi.

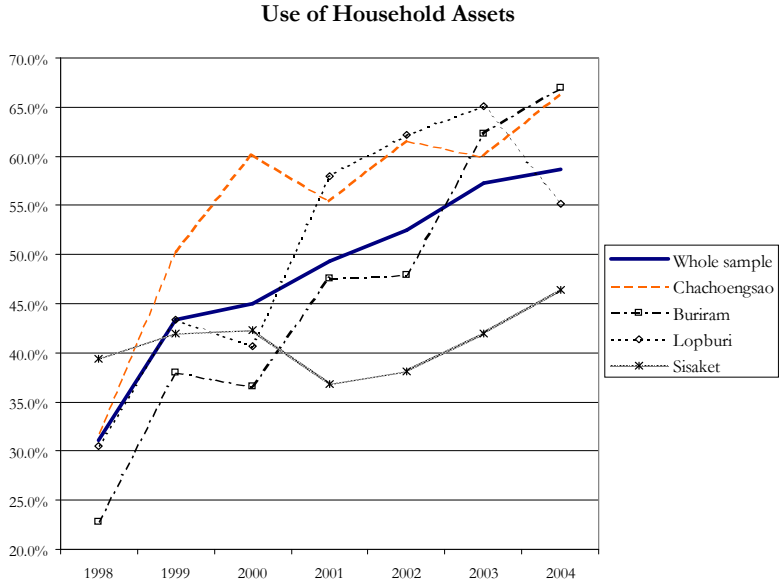
Figure 9:Rice Storage, by Province



Household assets: The trend shows a steady increase in the use of household assets, from a 31% in 1998 to a 59% in 2004.

All the provinces show an increase in the use of household assets, but Sisaket shows a lower increase of them all. Also the increase is not always monotonic.

Figure 10: Household Assets, by Province



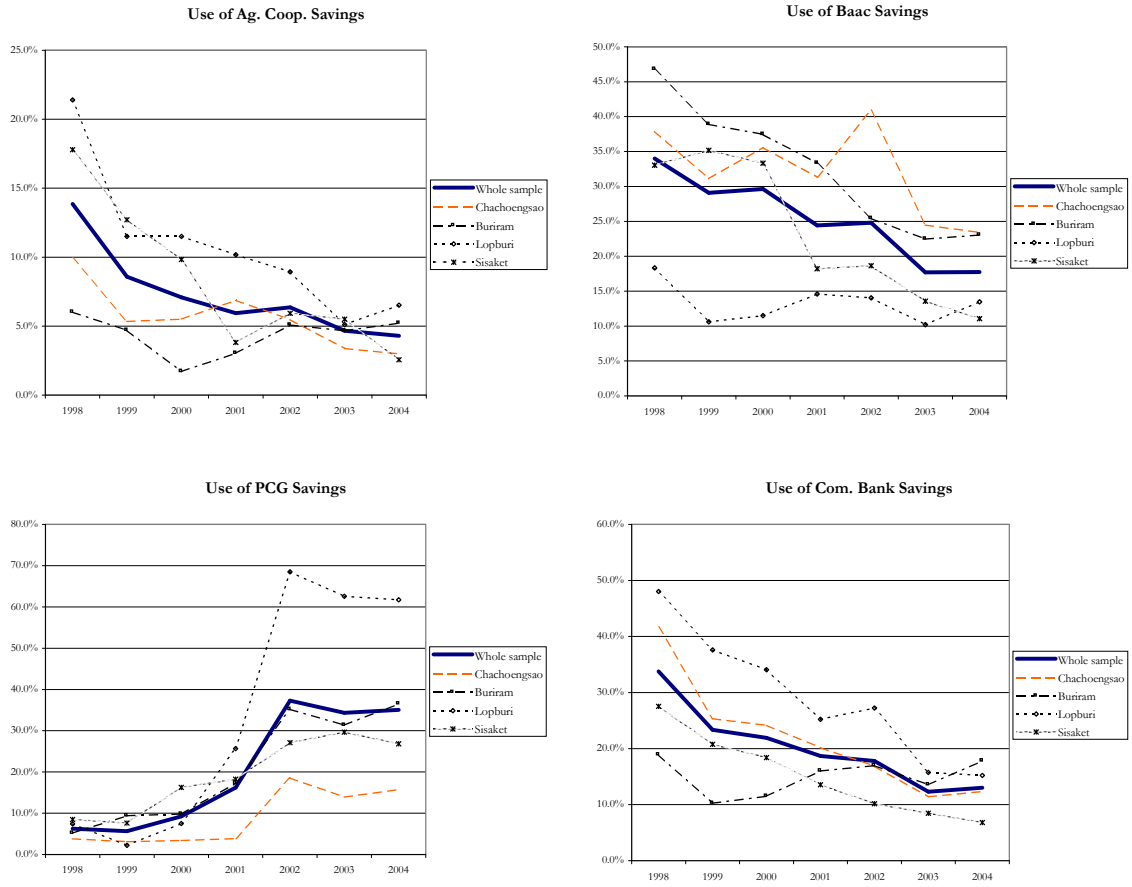
All these figures show an important heterogeneity by province, we can conclude that it is important to consider all these variations when analyzing the effect of a large scale program as the Million Bath Fund.

3.1 Looking at the separate instruments for savings

We now analyze the trends for four institutions that allow for savings: BAAC, agricultural cooperatives, commercial banks and PCGs.

In the case of BAAC, agricultural cooperatives and commercial banks we can appreciate that there is a decreasing trend for the whole period. Only PCG savings increased, it seems that part of the borrowing from the Million Bath Fund went to savings.

Figure 11:Saving instruments, by province



The latter variables measures use of saving, by taking the difference between years, however, some households have savings accounts, however, the report on savings can have a lot of measurement error, for that reason we analyze separately proportion of households with a savings account.

Table 2: Households with savings accounts

Central north_east Year	1997	1998	1999	2000	2001	2002	2003	2004
With BAAC sav	27.8%	23.1%	30.6%	36.0%	37.8%	47.2%	48.4%	48.8%
With PCG sav	5.1%	2.7%	5.5%	9.1%	15.8%	35.8%	35.3%	35.3%
With Com. Bk sav	26.0%	18.5%	20.3%	23.4%	21.7%	24.2%	26.2%	27.6%
With sav>0	55.8%	46.0%	53.7%	60.8%	64.3%	77.5%	78.8%	79.3%

We can see an increase in the accounts, for BAAC and PCG, and a increase for commercial banks, but only after 1998.

In this case, we observe an important increment in the number of household with positive savings, especially with PCG savings from 2002, then, the Million Bath Fund might had had an effect on savings.

3.2 Combination of instruments

In the previous tables we could appreciate the use of the instruments, but it is important to know how many instruments households use. They could be borrowing from multiple sources or could just rely on only one. We will focus mostly on formal and informal borrowing, we define formal borrowing the loans made by BAAC, PCG, commercial banks, agricultural cooperatives, rice banks and village funds. Informal borrowings are the loans made by a relative, neighbor, store owner, landlord or moneylender.

The following table shows how many households use only formal borrowing, only informal borrowing, both of them or neither of them.

We can appreciate a decreasing trend in the number of households not using any borrowing until 2000, then an increase, to drop significantly in 2002. Also, the category "informal borrowing only" was almost eliminated in 2002., which again could be the effect of the Million Bath Fund program.

Table 3: Combination of borrowing instruments

None, For. Borrowing and Inf. Borrowing	**total**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
none	35.2	51.1	43.8	37.1	41.1	42.6	24.1	21.3	21.5
only inf_bor	16.1	16.9	25.5	28.5	22.3	20.8	6.8	4.2	3.9
inf_bor and for_bor	15.1	4.4	10.7	13.3	13.9	12.1	23.8	21.4	20.7
for_bor	33.6	27.6	20.1	21.1	22.7	24.5	45.4	53.2	54
Total	100	100	100	100	100	100	100	100	100

But not also the combination of formal and informal borrowing is important, households can use more that one formal or informal source of borrowing, as we saw there are many institutions that can loan money, formally and informally. However,looking at the data, that is not the case, most of the household use only one informal source of informal borrowing and formal borrowing, until 2002, were the Million Bath Fund started and most of the household started using two sources of formal borrowing.

Tabla 4: Number of instruments used

Number of formal borrowing instruments used

	1997	1998	1999	2000	2001	2002	2003	2004
0	67.89	69.21	65.52	63.48	63.37	31.08	25.6	25.31
1	31.03	28.81	31.35	33.92	34.03	45.32	51.61	46.25
2	1.08	1.98	3.02	2.5	2.39	21.31	20.19	25.31
3			0.1	0.1	0.21	2.29	2.5	3.02
4							0.1	0.1

Number of informal borrowing instruments used

	1997	1998	1999	2000	2001	2002	2003	2004
0	78.56	63.88	58.23	63.79	67.22	69.44	74.4	75.52
1	19.29	27.45	30.31	28.1	27.16	24.22	21.33	20.83
2	2.05	7.41	9.69	7.28	4.47	5.3	3.64	2.92
3	0.11	1.04	1.67	0.83	1.04	0.94	0.62	0.73
4		0.1	0.1		0.1	0.1		
5		0.1						

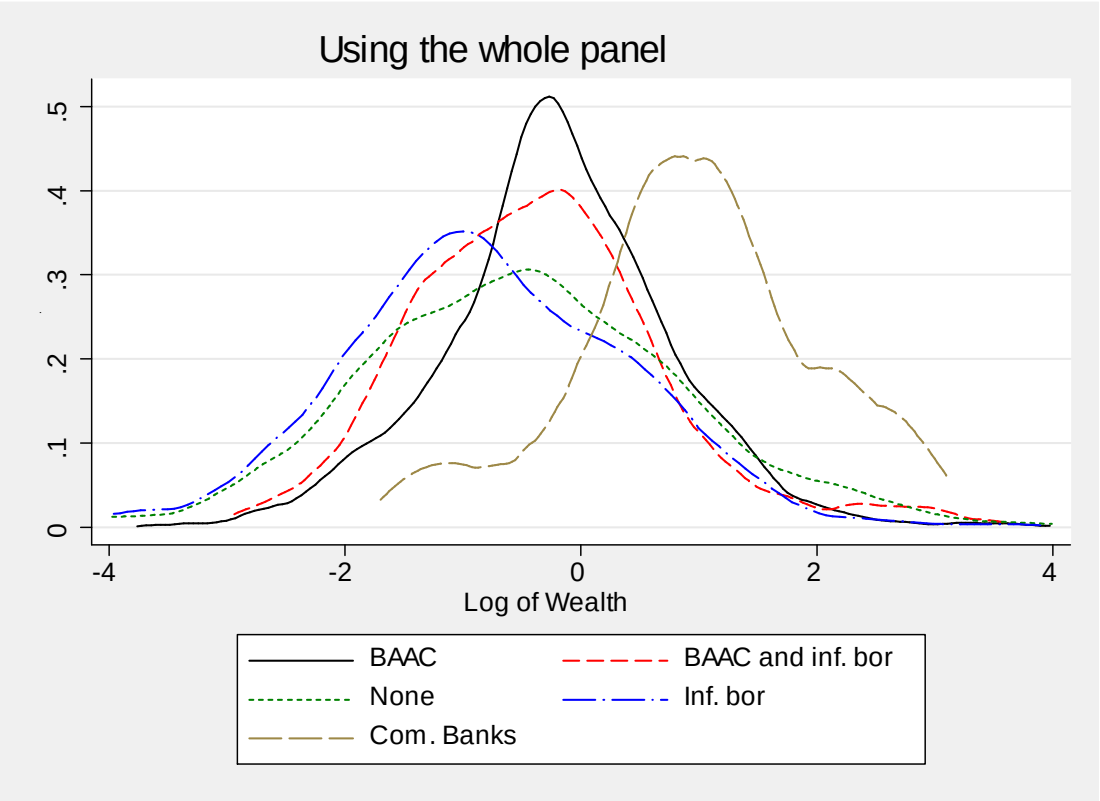
4 Who are the using formal savings, formal borrowings and informal borrowing?

In the last section we show the percentage of household that use any financial instrument, and some combinations of them, in this section we investigate which households characteristics are correlated with the use different instruments.

Among the possible variables that could be correlated with the use of financial instruments, First we are interested in wealth, in general, we think that informal borrowing tends to have higher interest rates, and at the same time formal borrowing could have a fixed cost or maybe the need for some collateral, producing differences in access due to wealth.

The next graph presents the distribution of wealth of the households using the different categories. these are: Borrowing from the BAAC, borrowing from a commercial bank, informal borrowing, BAAC and informal borrowing and not borrowing.

Figure 11:Wealth distribution by use of financial instruments



Interestingly, we find that household with access to commercial banks have the highest level of wealth and household using only informal borrowing have the lowest level of wealth, indicating that low wealth might lead household to borrow informally. At the same time , that rich household have access to commercial banks could be the results of restrictions and fixed costs, or that commercial banks screen out better projects than the rest of the financial institutions in rural Thailand.

In order to understand better what characteristics are correlated with the use of the different financial instrument, a selection correction approach was used, this implies that two equations were estimated. First a selection equation, to correlate several variables, at a village and household level, with the use of financial instruments, and a second, to find variables correlated with the amount used (borrowed or saved) .

The next table shows the results for two different definitions of savings, first is use of formal savings, defined as Savings in t minus Savings in t-1, if that difference is distinct from zero, then the household used savings. The second is having an account, is just having savings greater than zero.

The variable included are obtained from the key informant (KI), he or she reports important information at a village level, also some variables are obtained from the Community Development Department (CDD), for further detail on the variables look at Kaboski and Townsend (2009). Also some variables, indicate asymmetry of wealth (wealth dispersion), technological correlation across households (number of households with bad year) and risk-type of the borrower (probability of good year), for more detail on the variables look

Ahlin and Townsend (2004).

Table 5: Use of formal savings and probability of having an account

Use of formal savings		**Having a saving account**	
Amount	sav	**Amount**	use_sav
		fsav	
Age of Head of HH	705.63222	Age of Head of HH	3213.5378***
Age squared of Head of HH	-12.621849	Age squared of Head of HH	-28.522353***
Years of Ed. head of HH	2009.7176**	Years of Ed. head of HH	2166.8611***
Sex of Head of HH	-7245.0601	Sex of Head of HH	7636.0188*
Number of males in HH	4004.3109	Number of males in HH	-3193.7649
Number of females in HH	7285.1997**	Number of females in HH	12819.602***
Number of kids in HH	-74.468913	Number of kids in HH	-960.64487
Wealth level	8461.2158***	Wealth level	13948.204***
wealth squared	-178.27855***	wealth squared	-164.68918***
Wealth dispersion	-31858.232***	Wealth dispersion	-23064.047***
number of HH with bad year	22897.339***	number of HH with bad year	-13968.671**
probability of good year	-322.05145	probability of good year	18594.738**
Constant	-79500.727**	Constant	-129765.16***
Probit		**Probit**	
baac in village KI	-0.00858172	baac in village KI	-0.00017416
Ag. Coop in village KI	-0.02528456	Ag. Coop in village KI	-0.00013653
Perc. of HH in agrc. activities KI	.0495843**	Perc. of HH in agrc. activities KI	.00009891**
pcg in village KI	.21140493***	pcg in village KI	0.00004803
women's group in village Ki	-.13133231***	women's group in village Ki	-0.00019359
Factories un this amphoe KI	0.01351787	Factories un this amphoe KI	0.0001095
Villa. has public storage KI	-.09274525***	Villa. has public storage KI	-0.00002948
Villa. has comittee for conflicts KI	.03852464*	Villa. has comittee for conflicts KI	-0.00008798
commercial bank in village KI	2.0354453***	commercial bank in village KI	-.0005604**
emergency fund in village KI	0.04568051	emergency fund in village KI	-0.00017111
Wealth by village	0.00015373	Wealth by village	-0.00008289
Ave. eduction by village	0.0381812	Ave. eduction by village	-.00018398*
Assemby hall CDD	-.09916091**	Assemby hall CDD	-0.00014527
CDD Multiple Occ.	0.00143629	CDD Multiple Occ.	-0.00022987
Economic Status CDD	.11106966***	Economic Status CDD	-.0001301**
Develp. Level CDD	-.09856489**	Develp. Level CDD	-4.46E-06
CDD travel time to nearest dist	0.04739949	CDD travel time to nearest dist	-.00119281***
Age of Head of HH	0.00911389	Age of Head of HH	.02788473***
Age squared of Head of HH	-0.00012137	Age squared of Head of HH	-.00024757***
Years of Ed. head of HH	.02451728***	Years of Ed. head of HH	.01874439***
Sex of Head of HH	0.03704483	Sex of Head of HH	.06618305*
Number of males in HH	0.03044895	Number of males in HH	-0.02762891
Number of females in HH	.09547958***	Number of females in HH	.11120811***
Number of kids in HH	0.00866082	Number of kids in HH	-0.00836054
Wealth level	.13954827***	Wealth level	.12125138***
wealth squared	-.00282508***	wealth squared	-.00144236***
Wealth dispersion	-.29507033***	Wealth dispersion	-.1992545***
number of HH with bad year	.28897242***	number of HH with bad year	-.12138843**
probability of good year	0.1035061	probability of good year	.16138815**
Constant	-0.53178087	Constant	-1.1249376***
athrho		athrho	
Constant	1.2148368***	Constant	14.102482*
lnsigma		lnsigma	
Constant	11.739789***	Constant	11.654966***
Statistics		Statistics	
N	4567	N	5304
r2_p		r2_p	
legend: * p<.10; **p<.05; *** p<.01		legend: * p<.10; **p<.05; *** p<.01	

From the table we see that there are some important similarities, for instance wealth is positively (and concavely) correlated with using savings or having an account, also the number of females in the household and the years of education of the head are positively correlated with both variables. On the other hand, some variables are only correlated with having an account, like age of the head of the household.

The following table uses the same set of variables, but know we are looking for correlations with formal borrowing and borrowing from the BAAC.

Table 6: Use of formal borrowing and BAAC borrowing

Using formal borrowing		**Using formal borrowing, BAAC**	
Amount of debt	fbor	**Amount of debt**	b_baac
Age of Head of HH	-4702.413***	Age of Head of HH	95.204328
Age squared of Head of HH	42.998491***	Age squared of Head of HH	-0.32774926
Years of Ed. head of HH	-3199.0227***	Years of Ed. head of HH	-2189.8565**
Sex of Head of HH	-421.82695	Sex of Head of HH	8362.7914*
Number of males in HH	-1271.8282	Number of males in HH	631.34641
Number of females in HH	-1858.4949	Number of females in HH	-2417.2245
Number of kids in HH	648.06634	Number of kids in HH	2812.6792
Wealth level	1923.6166	Wealth level	7712.7296***
wealth squared	-160.20824***	wealth squared	-356.60742***
Wealth dispersion	18109.552***	Wealth dispersion	12763.212*
number of HH with bad year	38892.839***	number of HH with bad year	2939.5009
probability of good year	5447.8897	probability of good year	-681.9025
Constant	148346.8***	Constant	-10999.124
Probit		**Probit**	
baac in village KI	-0.02173336	baac in village KI	.27381472***
Ag. Coop in village KI	.12937002***	Ag. Coop in village KI	0.02179426
Perc. of HH in agrc. activities KI	.09575418***	Perc. of HH in agrc. activities KI	.11863361***
pcg in village KI	.24844487***	pcg in village KI	.18168306***
women's group in village Ki	-.14720635***	women's group in village Ki	-0.0667034
Factories un this amphoe KI	0.0041761	Factories un this amphoe KI	-0.00485016
Villa. has public storage KI	-0.00004849	Villa. has public storage KI	.06740658**
Villa. has comittee for conflicts KI	-.06118593***	Villa. has comittee for conflicts KI	-.18392373***
commercial bank in village KI	-.47118435***	commercial bank in village KI	0.05297449
emergency fund in village KI	.12214876***	emergency fund in village KI	.23805811***
Wealth by village	-0.03238065	Wealth by village	-0.04436207
Ave. eduction by village	-0.01215321	Ave. eduction by village	.16813405***
Assemby hall CDD	-.15391382***	Assemby hall CDD	.3626461***
CDD Multiple Occ.	-0.07190096	CDD Multiple Occ.	-0.05002083
Economic Status CDD	-0.01187191	Economic Status CDD	.29770434***
Develp. Level CDD	0.02849043	Develp. Level CDD	-0.09900709
CDD travel time to nearest dist	.23463898**	CDD travel time to nearest dist	.93549573***
Age of Head of HH	.06588965***	Age of Head of HH	.02630266**
Age squared of Head of HH	-.00066037***	Age squared of Head of HH	-.00034789***
Years of Ed. head of HH	.01299317*	Years of Ed. head of HH	-0.00939703
Sex of Head of HH	.10993437**	Sex of Head of HH	.24671588***
Number of males in HH	.07018094***	Number of males in HH	.07880866***
Number of females in HH	.04861029*	Number of females in HH	.07657078**
Number of kids in HH	0.00460984	Number of kids in HH	-0.02642348
Wealth level	.10753567***	Wealth level	.13685666***
wealth squared	-.00176853***	wealth squared	-.00238144***
Wealth dispersion	-.39631538***	Wealth dispersion	-.56602946***
number of HH with bad year	-.7780028***	number of HH with bad year	.3084524***
probability of good year	0.01716089	probability of good year	-0.0122005
Constant	-1.1092207***	Constant	-2.8428159***
athrho		athrho	
Constant	-1.0782547***	Constant	-0.10352411
lnsigma		lnsigma	
Constant	11.402652***	Constant	11.12226***
Statistics		Statistics	
N	5305	N	5304
r2_p		r2_p	
legend: * p<.10; **p<.05; *** p<.01		legend: * p<.10; **p<.05; *** p<.01	

Again wealth is positively correlated with the used of formal and BAAC borrowing , age is also positive and concave related to both variables and in this case is the number of males which is positively correlated with the independent variables. Education is positively correlated with formal borrowing only.

Finally, the same model was run for informal borrowing and BAAC savings.

Table 7: Use of Informal Borrowings and BAAC savings

Using informal borrowing	
Amount of debt	ifbor
Age of Head of HH	-752.81892
Age squared of Head of HH	5.497404
Years of Ed. head of HH	-1059.7434
Sex of Head of HH	-5077.2953
Number of males in HH	7075.4783**
Number of females in HH	-3097.7
Number of kids in HH	-182.6273
Wealth level	-2901.1849
wealth squared	40.023335
Wealth dispersion	-4282.7945
number of HH with bad year	2585.009
probability of good year	-1854.9502
Constant	17659.265
Probit	
baac in village KI	.12778719**
Ag. Coop in village KI	0.04943825
Perc. of HH in agrc. activities KI	-.06132189**
pcg in village KI	-0.00004695
women's group in village Ki	-.13942062***
Factories un this amphoe KI	-0.03538788
Villa. has public storage KI	-0.01595181
Villa. has comittee for conflicts KI	-0.02431201
commercial bank in village KI	-.46020445**
emergency fund in village KI	-.14627596***
Wealth by village	-0.0367349
Ave. eduction by village	-0.02516625
Assemby hall CDD	-.16806036***
CDD Multiple Occ.	-.29555056***
Economic Status CDD	.14876552***
Develp. Level CDD	-0.00979171
CDD travel time to nearest dist	-0.1598635
Age of Head of HH	-0.0170252
Age squared of Head of HH	-0.00001765
Years of Ed. head of HH	-.02381725***
Sex of Head of HH	-0.06339577
Number of males in HH	.09969543***
Number of females in HH	0.01386565
Number of kids in HH	.09261862***
Wealth level	-.04612788***
wealth squared	.00073499**
Wealth dispersion	0.06933393
number of HH with bad year	0.07079865
probability of good year	-.21147634***
Constant	.68729921*
athrho	
Constant	0.07870369
lnsigma	
Constant	11.412587***
Statistics	
N	5305
r2_p	
legend: * p<.10; **p<.05; *** p<.01	

Using Baac savings	
Amount	sa_baac
Age of Head of HH	-782.87779
Age squared of Head of HH	5.1903583
Years of Ed. head of HH	-251.30964
Sex of Head of HH	-82.740792
Number of males in HH	11672.617**
Number of females in HH	7635.1345
Number of kids in HH	-4230.6774
Wealth level	1673.4827
wealth squared	-64.260791
Wealth dispersion	12294.964
number of HH with bad year	10996.857
probability of good year	6533.0021
Constant	-10477.95
Probit	
baac in village KI	.16450518***
Ag. Coop in village KI	-0.07199947
Perc. of HH in agrc. activities KI	.12638533***
pcg in village KI	0.07478152
women's group in village Ki	0.04183449
Factories un this amphoe KI	-0.03714664
Villa. has public storage KI	-0.02849805
Villa. has comittee for conflicts KI	-.11981432***
commercial bank in village KI	.84494677***
emergency fund in village KI	.18155307***
Wealth by village	.06091656*
Ave. eduction by village	.12669426***
Assemby hall CDD	.34135162***
CDD Multiple Occ.	-.18488214***
Economic Status CDD	.28920426***
Develp. Level CDD	-.12079949*
CDD travel time to nearest dist	.77473932***
Age of Head of HH	-0.001025
Age squared of Head of HH	-0.00005751
Years of Ed. head of HH	-0.00517956
Sex of Head of HH	.26767886***
Number of males in HH	0.03302056
Number of females in HH	.07384292**
Number of kids in HH	-0.00557606
Wealth level	.08910464***
wealth squared	-.00194723***
Wealth dispersion	-.33147606***
number of HH with bad year	.66259369***
probability of good year	0.04208428
Constant	-2.1622078***
athrho	
Constant	-0.02299464
lnsigma	
Constant	11.709717***
Statistics	
N	4567
r2_p	
legend: * p<.10; **p<.05; *** p<.01	

Wealth is negatively correlated with use of informal borrowing, also is education, which shows again that poor households tend to borrow from informal sources. For BAAC savings, wealth is positively correlated whit its use. However, age and education are not correlated with BAAC savings.

A probit was run also for the use of commercial banks, two household characteristics are related to the use of commercial banks, wealth, positively and head of the household being a rice farmer, negatively. Showing again that wealthier households use loans from commercial banks.

Table 8: Use of Commercial Banks

Probit on use of Comm. Banks Variable	
baac in village KI	0.3279782
Ag. Coop in village KI	0.6341585
Perc. of HH in agrc. activities KI	-0.0108488
pcg in village KI	-0.1262492
women's group in village Ki	**-.9136905*** **
Factories un this amphoe KI	**-.37597516***
Villa. has public storage KI	-0.0253354
Villa. has comittee for conflicts KI	**.50158414*** **
emergency fund in village KI	**.84418165** **
Wealth by village	0.0000380
Ave. eduction by village	0.2781503
Assemby hall CDD	-0.4874467
CDD Multiple Occ.	**1.4051613*** **
Economic Status CDD	0.2762163
Develp. Level CDD	-0.6480911
CDD distance to nearest major ro	-0.1466443
CDD travel time to nearest dist	-0.6613054
CDD dist to nearest major road i	-0.0000223
Age of Head of HH	0.0452145
Age squared of Head of HH	-0.0005239
Years of Ed. head of HH	0.0317898
Sex of Head of HH	-0.0354026
Number of males in HH	-0.1393535
Number of females in HH	-0.0101803
Number of kids in HH	0.0341262
Wealth level	**.23464941*** **
wealth squared	**-.01498975*** **
Head HH rice farmer	**-.6581564** **
Head HH orchard farmer	-0.0853979
Head HH white collar	-0.2796487
Head HH blue collar	-0.2286205
HH has a Business	-0.0941798
Wealth dispersion	**-12.604463***
number of HH with bad year	-0.4886222
probability of good year	**-.49639984***
Constant	7.9738436
N	5227.0000000
r2_p	0.3433758

legend: * p<.10; **<.05; *** p<.01

However, the former tables have the problem that some households were already borrowing or saving, which makes difficult to draw some conclusions, because higher wealth could be the result of borrowing or savings and, for instance, starting a business. For that reason we now do a different type of correlation. We took people that were not formally borrowing and savings in 1997 (347 households) and then we recorded which borrowed in the next 7 years (225 households) or had formal savings (234 households), so we have new costumer, for formal borrowing and formal savings. Using basically the same set of variables as before, the next table shows the results for household that start to borrow or to save.

Table 9: Use of Commercial Banks

Variable	n_borrowers	n_savers
baac_ki	-.38874837**	-.68738949***
agcoop_ki	0.05192388	0.28161858
pagric_ki	1.3181159***	1.0808178***
pcg_ki	0.30292998	.58027268**
women_ki	0.10533549	-0.20633252
nfactory_ki	.2305573**	-0.03218056
pstor_vi	-0.09589824	-.34618214**
ss5a	0.00994903	0.08217955
timcen96	-0.72638881	-0.42304653
v_wealth97	-0.00150572	-0.00599204
wealth97	0.00430782	0.01757941
w972	1.11E-07	0.00012712
rfarmer97	.33698873*	0.26642135
ofarmer97	0.37621115	0.0335835
inactive97	-0.13944033	-0.29501072
ibo97	.46013374**	-0.1378001
age_h97	0.04281417	0.06036399
age972	-0.00050995	-0.00056187
edu_h97	0.01352796	.09404257**
sex_h97	-0.11335546	-0.22829222
men97	-0.05213806	-0.0895003
women97	0.19041529	0.24311275
kids97	0.01970428	-0.03678305
_Ichangwa~27	0.19343493	0.00468795
_Ichangwa~49	0.45331121	.64607816**
_Ichangwa~53	0.16227858	-0.22217911
_cons	-1.7634226	-1.0635241
N	329	329
r2_p	0.15101627	0.18057408

legend: * p<.10;** p<.05; *** p<.0

Not many significant variables are found, in the case of formal borrowing, we can see a substitution from informal borrowing to formal borrowing. In the case of formal savings, most educated households tend to save. In both cases, wealth is not significant, this implies that it is important to account for the dynamics in the borrowing and savings decisions.

4.1 What they do with the money?

Using the categories defined previously, new users of borrowing and new users of borrowing, we can see what changed in households that started to save or borrow.

The next table shows the mean comparisons for several items between households that start to borrow

and the ones that didn't. We observe an increment in businesses, in household assets, the expenditure on seed and expenditure on education for the household that started to borrow. For variables like business assets and livestock, the no borrowers show a bigger increase, but if we consider that the starting level is high for the new borrowers, then the growth rate seems less impressive.

Table 10: New borrowers outcomes

New users of borrowings			Growth	
	No	Yes	No	Yes
Rice farmer 97	0.24	0.41		
Rice farmer 04	0.20	0.33		
Orchard farmer 97	0.07	0.08		
Orchard farmer 04	0.29	0.30		
Had business 97	0.10	0.10		
Had business 04	0.31	0.46		
Livestock 97	3961.48	11100.89		
Livestock 04	6910.11	9677.13	74.4%	-12.8%
Business assets 97	2839.10	10788.02		
Business assets 04	8449.61	12012.73	197.6%	11.4%
HH assets 97	38381.47	42518.35		
HH assets 04	63877.38	83905.66	66.4%	97.3%
Exp. On Education 97	2182.62	3104.25		
Exp. On Education 04	1786.29	3654.32	-18.2%	17.7%
Total Consumption 97	54071.8	64622.1		
Total Consumption 04	55485.6	68905.1	2.6%	6.6%
Exp. On Seeds 97	429.8	855.8		
Exp. On Seeds 04	1325.1	4645.5	208.3%	442.8%
Ex. On Fertilizers 97	1248.8	2417.8		
Ex. On Fertilizers 04	1664.5	3083.6	33.3%	27.5%
Ex. On Pesti. 97	274.8	693.3		
Ex. On Pesti. 04	618.3	746.1	125.0%	7.6%
Other farm Ex. 97	3715.9	6261.6		
Other farm Ex. 04	4262.3	11699.2	14.7%	86.8%

Similar results can be found if we compare for households that started saving to household that did not. A notable increase in education expenses, household assets, business assets and seed expenses can be found.

Table 11:New savers outcomes

New users of savings			Growth	
	No	Yes	No	Yes
Rice farmer 97	0.26	0.39		
Rice farmer 04	0.30	0.29		
Orchard farmer 97	0.07	0.08		
Orchard farmer 04	0.30	0.30		
Had business 97	0.08	0.11		
Had business 04	0.34	0.45		
Livestock 97	4188.50	10716.67		
Livestock 04	11982.35	7667.09	186.1%	-28.5%
Business assets 97	3930.53	9955.23		
Business assets 04	2797.82	14131.59	-28.8%	42.0%
HH assets 97	23865.57	49369.05		
HH assets 04	32113.75	94987.14	34.6%	92.4%
Exp. On Education 97	2253.70	3034.48		
Exp. On Education 04	1952.47	3556.15	-13.4%	17.2%
Total Consumption 97	47974.5	67160.7		
Total Consumption 04	34398.0	76573.3	-28.3%	14.0%
Exp. On Seeds 97	368.7	868.9		
Exp. On Seeds 04	1313.5	4587.5	256.3%	428.0%
Ex. On Fertilizers 97	1320.3	2338.3		
Ex. On Fertilizers 04	1638.6	3066.7	24.1%	31.1%
Ex. On Pesti. 97	261.1	683.8		
Ex. On Pesti. 04	165.9	913.7	-36.5%	33.6%
Other farm Ex. 97	3037.7	6491.2		
Other farm Ex. 04	6774.1	10616.1	123.0%	63.5%

Finally, we run a probit on starting a business, we consider all the households that did not have a business in t and we look for households stared a business in $t+1$. Then we included in the probit model variables that identify if the household was borrowing, formally or informally, and saving in t to obtain correlations between those variables and the probability of starting a business.

The first probit does not restrict the sample and we find that use of formal savings is positively correlated with starting a business, also is use formal borrowing, but less significant. Wealth is positively correlated also.

Then we consider households that did not borrow formally in $t-1$,in order to capture only new formal borrowers. Now wealth and formal borrowing are not significant. But formal savings are significant.

Table 12: New borrowers by type

Model for new businesses
new_bus: HH did not have a business in t-1 but they do in t
new_bus_nb: HH did not have a business in t-1 and they did not borrow
but they do have a business in t

Variable	new_bus	new_bus_nb
Past wealth	.04008016**	0.03338777
Past wealth squared	-.0008152*	-0.00069768
Was rice farmer last year	.25355373***	.27556294***
Was orchard farmer last year	-0.07110983	-0.06306782
Was inactive last year	-0.0002793	-0.02087456
Age of Head of HH	-0.00210801	0.00265854
Age squared of Head of HH	0.00003202	-9.83E-06
Years of Ed. head of HH	0.00259684	-0.01135244
Sex of Head of HH	0.04723549	0.13360023
Number of males in HH	0.05702779	0.05220644
Number of females in HH	0.01146723	0.01871928
Number of kids in HH	0.02016404	0.0206017
probability of good year	0.12768479	0.12721789
baac in village KI	-0.0382367	-0.04888468
Ag. Coop in village KI	.1294326*	.23504811**
pcg in village KI	0.09436701	.28538451***
women's group in village Ki	-.11749484*	-.13906955*
Wealth by village	-0.01300172	-0.04132775
Used formal borrowing	.10953335*	0.03569461
Used informal borrowing	-0.0241584	-0.01796624
Used formal savings	.22923494***	.23645157***
changwat==27	-0.06949111	-0.14322227
changwat==49	-0.01108607	0.03907505
changwat==53	-.41127343***	-.47289337***
year==1998	.47736578***	.32294155**
year==1999	-.20138927*	-.39049672**
year==2000	0.12405382	0.01672845
year==2001	-0.08830791	-0.12664604
year==2002	.24471146**	0.16560921
year==2003	0.07482146	
year==2004		-.51224173**
Constant	-1.4652521***	-1.4495613**
N	3302	2003
r2		

legend: * p<.10; ** p<.05; *** p<.01

4.2 Reasons to borrow

Households declare for what they ask the money for, the following two tables show the main uses for 1997 and 2004.

Table 13: Reason to borrow 1997

1997	Walking Tractor	Fertelizer,seed	Livestock	Other Farm E.	Business equip.	Buy land	Build/buy House
Neighbor	0.4%	15.2%	1.1%	2.8%	3.9%	2.5%	6.4%
Relative	1.6%	13.4%	1.2%	2.3%	8.5%	1.4%	10.6%
BAAC	4.9%	45.2%	5.6%	7.2%	8.0%	1.2%	3.9%
PCG	0.0%	6.4%	6.4%	2.1%	8.5%	2.1%	6.4%
Com. Bank	2.4%	9.6%	4.8%	4.0%	22.4%	7.2%	19.2%
Ag. Coop.	2.2%	50.1%	3.0%	3.6%	11.3%	0.8%	3.0%
Vill. Fund	2.9%	26.5%	8.8%	2.9%	8.8%	0.0%	0.0%
Rice Bk.	0.0%	7.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Moneylender	1.4%	28.3%	2.2%	4.2%	3.6%	1.4%	5.9%
Store Owner	2.8%	9.7%	0.7%	1.4%	1.4%	1.4%	4.1%
Supplier of input	0.0%	50.0%	25.0%	0.0%	12.5%	0.0%	0.0%
Landlord	0.0%	20.0%	0.0%	0.0%	20.0%	20.0%	0.0%
Purchaser of output	0.0%	51.2%	0.0%	12.2%	12.2%	0.0%	0.0%
Other	1.4%	31.4%	6.5%	4.0%	7.1%	2.5%	7.1%
Total	2.7%	31.5%	3.8%	4.6%	7.8%	1.7%	6.0%

1997	Relend to others	Ceremony	Consumption	Motorcycle	Pick up track or car	Buy electronics	Educ Expenses	Other
Neighbor	0.7%	5.3%	38.2%	1.4%	0.7%	0.4%	6.0%	24.7%
Relative	1.2%	3.7%	26.6%	2.8%	3.2%	0.9%	6.3%	28.7%
BAAC	1.1%	1.9%	22.0%	1.1%	1.5%	0.2%	3.5%	17.3%
PCG	0.0%	0.0%	40.4%	0.0%	0.0%	0.0%	4.3%	25.5%
Com. Bank	3.2%	0.8%	10.4%	2.4%	11.2%	0.8%	4.0%	23.2%
Ag. Coop.	0.6%	1.4%	24.5%	0.6%	1.1%	0.3%	5.5%	20.9%
Vill. Fund	0.0%	0.0%	38.2%	0.0%	2.9%	0.0%	8.8%	14.7%
Rice Bk.	0.0%	0.0%	64.3%	0.0%	0.0%	0.0%	0.0%	28.6%
Moneylender	2.5%	4.2%	30.0%	1.4%	1.7%	0.3%	4.2%	25.5%
Store Owner	0.0%	1.4%	20.7%	16.6%	9.0%	17.2%	1.4%	17.2%
Supplier of input	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	12.5%
Landlord	0.0%	0.0%	20.0%	0.0%	0.0%	0.0%	0.0%	20.0%
Purchaser of output	0.0%	2.4%	29.3%	2.4%	4.9%	0.0%	0.0%	29.3%
Other	1.1%	0.8%	23.2%	2.8%	4.5%	1.7%	4.2%	18.1%
Total	1.2%	2.4%	25.2%	2.2%	2.6%	1.2%	4.4%	21.3%

Table 14: Reason to borrow 2004

2004	Walking Tractor	Fertelizer,seed	Livestock	Other Farm E.	Business equip.	Buy land	Build/buy House
Neighbor	2.2%	23.9%	0.0%	0.0%	10.9%	0.0%	0.0%
Relative	2.3%	18.5%	0.9%	0.5%	7.4%	4.2%	8.3%
BAAC	2.9%	49.5%	4.1%	1.4%	9.8%	0.5%	3.3%
PCG	0.0%	22.0%	0.7%	0.0%	2.0%	0.0%	1.3%
Com. Bank	0.0%	37.5%	4.2%	4.2%	12.5%	4.2%	20.8%
Ag. Coop.	0.5%	54.4%	3.8%	2.2%	6.0%	0.5%	4.4%
Vill. Fund	0.3%	43.8%	3.3%	0.6%	7.1%	0.4%	1.8%
Rice Bk.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Moneylender	2.3%	24.3%	1.1%	0.6%	5.1%	0.6%	5.1%
Store Owner	2.7%	4.0%	0.0%	1.3%	5.4%	0.0%	2.7%
Supplier of input	0.0%	20.0%	0.0%	0.0%	68.0%	0.0%	4.0%
Landlord	0.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Purchaser of output	0.0%	81.0%	0.0%	9.5%	14.3%	0.0%	4.8%
Other	0.4%	30.6%	3.9%	0.4%	3.2%	0.4%	2.1%
Total	1.1%	37.4%	3.0%	0.8%	6.9%	0.6%	3.0%

2004	Relend to others	Ceremony	Consumption	Motorcycle	Pick up track or car	Buy electronics	Educ Expenses	Other
Neighbor	0.0%	8.7%	34.8%	0.0%	0.0%	2.2%	15.2%	30.4%
Relative	0.5%	4.6%	38.0%	0.9%	0.5%	1.4%	5.6%	28.7%
BAAC	3.3%	1.5%	51.9%	1.7%	1.4%	0.2%	5.3%	17.0%
PCG	1.3%	0.7%	82.7%	0.0%	0.0%	0.0%	0.7%	1.3%
Com. Bank	0.0%	0.0%	33.3%	0.0%	4.2%	0.0%	0.0%	16.7%
Ag. Coop.	2.7%	1.1%	54.9%	0.0%	0.0%	0.5%	7.7%	17.0%
Vill. Fund	2.1%	0.2%	57.2%	0.3%	0.0%	0.2%	3.3%	8.5%
Rice Bk.	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Moneylender	1.1%	5.1%	39.5%	1.1%	1.7%	1.7%	4.0%	35.0%
Store Owner	0.0%	0.0%	4.0%	50.3%	7.4%	19.5%	0.0%	2.7%
Supplier of input	0.0%	0.0%	8.0%	0.0%	0.0%	0.0%	0.0%	4.0%
Landlord	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%
Purchaser of output	0.0%	0.0%	47.6%	0.0%	0.0%	0.0%	0.0%	9.5%
Other	1.1%	0.5%	54.7%	0.4%	0.9%	1.5%	16.4%	4.9%
Total	1.8%	1.2%	51.6%	2.7%	0.9%	1.4%	6.6%	12.0%

The most common uses are: Consumption (40%, roughly), fertilizer, pesticides and seeds (35%), educational expenses and business equipment (6% to 10%) , the category others is also important. The numbers add up to more than 100% because a loan can have more than 1 use.

We can appreciate that loans from commercial banks have other priorities: Buy/Build a house, fertilizers, buy land are the most important items and much less into consumption. We can see also that the BAAC loans are used mostly in fertilizers and consumption. PCG loans go mostly to consumption.

4.3 Sources of money to buy business assets

In this section we examine the sources of money used to buy business assets. We considered only businesses that were one year old or less. Possible, some household have more than one business, so it is important to distinguish also households that had no business before.

In the next table we observe the frequencies for the different sources used. Savings is the most used source to buy assets (51%), restricting to households with no business the year before, savings is still the most used instrument (50%).

Table 15:Financing business assets

For business no more than one year old

Source of funds to buy assets	
Used Savings	51.4%
Sold Land	0.9%
Sold Livestock	1.1%
Sold Product	12.4%
Credit from Store	3.0%
Bor. Com. Bank	1.3%
Bor. BAAC	6.0%
Bor. Ag. Coop.	0.3%
Bor. PCG	0.0%
Bor. Another Inst	1.6%
Bor. Relatives	3.7%
Bor. Non-Relatives	0.9%
Bor. Money Lenders	1.8%
Inheritance	0.7%
Gift	4.3%
Bor. From Employer	0.3%
Other Bor.	9.4%

Amount used

	N of HH	**Amount**
Used Savings	362	28,592
Sold Land	6	39,333
Sold Livestock	8	11,288
Sold Product	87	33,014
Credit from Store	21	83,504
Bor. Com. Bank	9	60,478
Bor. BAAC	42	34,544
Bor. Ag. Coop.	2	14,120
Bor. PCG	0	
Bor. Another Inst	11	39,705
Bor. Relatives	26	72,387
Bor. Non-Relatives	6	17,700
Bor. Money Lenders	13	55,654
Inheritance	5	183,940
Gift	30	33,087
Bor. From Employer	2	6,700
Other Bor.	66	63,302

Additional Star-up Capital

	N of HH	**Amount**
Savings	46	7,293
Land or other assets	1	5,000
Credit from Store	0	
Com. Bank	4	535,000
BAAC	13	102,308
Ag. Coop.	6	61,167
PCG	0	
Another Institution	16	20,782
Relatives	11	75,182
Non-Relatives	1	2,500
Money lender	5	47,600
Gifts	2	120,000
From Employer	2	2,500
Other	10	32,420

For business no more than one year old And HH with no business before

Source of funds to buy assets	
Used Savings	50.4%
Sold Land	1.2%
Sold Livestock	0.8%
Sold Product	12.1%
Credit from Store	3.6%
Bor. Com. Bank	0.4%
Bor. BAAC	4.8%
Bor. Ag. Coop.	0.4%
Bor. PCG	0.0%
Bor. Another Inst	2.0%
Bor. Relatives	4.0%
Bor. Non-Relatives	1.2%
Bor. Money Lenders	1.6%
Inheritance	1.2%
Gift	2.4%
Bor. From Employer	0.0%
Other Bor.	7.3%

Amount used

	N of HH	**Amount**
Used Savings	125	18,338
Sold Land	3	42,000
Sold Livestock	2	26,500
Sold Product	30	8,612
Credit from Store	9	52,431
Bor. Com. Bank	1	2,000
Bor. BAAC	12	43,783
Bor. Ag. Coop.	1	26,200
Bor. PCG	0	
Bor. Another Inst	5	7,950
Bor. Relatives	10	59,080
Bor. Non-Relatives	3	9,000
Bor. Money Lenders	4	61,125
Inheritance	3	301,333
Gift	6	22,350
Bor. From Employer	0	
Other Bor.	18	20,175

Additional Star-up Capital

	N of HH	**Amount**
Savings	15	12,093
Land or other assets	1	5,000
Credit from Store	0	
Com. Bank	0	
BAAC	3	133,333
Ag. Coop.	1	50,000
PCG	0	
Another Institution	8	8,688
Relatives	5	40,400
Non-Relatives	0	
Money lender	1	3,000
Gifts	2	120,000
From Employer	0	
Other	3	6,333

Next, we divided the sample in before 2002 and after 2001, here an important change can be seen. Before 2002, 40% of the households used savings as a source to buy the business assets, after 2001, 72% used savings. It seems that people had money from the village funds, put it in a savings account and used it to buy assets.

Table 16:Financing business assets, before and after 2001

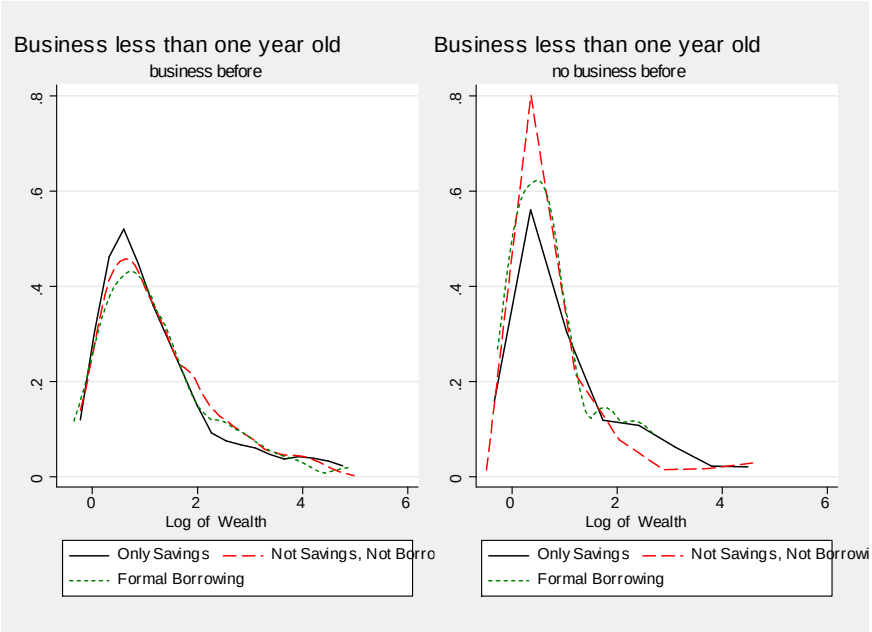
For business no more than one year old	
Before 2002	
Source of funds to buy assets	
Used Savings	40.3%
Sold Land	0.5%
Sold Livestock	1.6%
Sold Product	14.5%
Credit from Store	4.3%
Bor. Com. Bank	0.5%
Bor. BAAC	7.8%
Bor. Ag. Coop.	0.3%
Bor. PCG	0.0%
Bor. Another Inst	0.5%
Bor. Relatives	5.4%
Bor. Non-Relatives	1.3%
Bor. Money Lenders	1.9%
Inheritance	1.3%
Gift	3.5%
Bor. From Employer	0.3%
Other Bor.	8.9%
After 2002	
Source of funds to buy assets	
Used Savings	71.5%
Sold Land	0.4%
Sold Livestock	0.8%
Sold Product	8.7%
Credit from Store	1.7%
Bor. Com. Bank	0.0%
Bor. BAAC	3.7%
Bor. Ag. Coop.	0.0%
Bor. PCG	0.0%
Bor. Another Inst	3.7%
Bor. Relatives	0.8%
Bor. Non-Relatives	0.4%
Bor. Money Lenders	1.7%
Inheritance	0.0%
Gift	5.4%
Bor. From Employer	0.0%
Other Bor.	7.0%

For business no more than one year old And HH with no business before	
Before 2002	
Source of funds to buy assets	
Used Savings	34.9%
Sold Land	1.3%
Sold Livestock	0.7%
Sold Product	17.1%
Credit from Store	5.9%
Bor. Com. Bank	0.7%
Bor. BAAC	7.2%
Bor. Ag. Coop.	0.7%
Bor. PCG	0.0%
Bor. Another Inst	0.7%
Bor. Relatives	5.9%
Bor. Non-Relatives	2.0%
Bor. Money Lenders	2.0%
Inheritance	2.0%
Gift	2.0%
Bor. From Employer	0.0%
Other Bor.	8.6%
After 2002	
Source of funds to buy assets	
Used Savings	75.0%
Sold Land	1.0%
Sold Livestock	1.0%
Sold Product	4.2%
Credit from Store	0.0%
Bor. Com. Bank	0.0%
Bor. BAAC	1.0%
Bor. Ag. Coop.	0.0%
Bor. PCG	0.0%
Bor. Another Inst	4.2%
Bor. Relatives	1.0%
Bor. Non-Relatives	0.0%
Bor. Money Lenders	1.0%
Inheritance	0.0%
Gift	3.1%
Bor. From Employer	0.0%
Other Bor.	5.2%

The next step was to divided the new entrepreneurs in 3 types:The ones that used savings, but not formal borrowing. The ones that used neither savings, nor formal borrowing. Most of these entrepreneurs used informal borrowing or money from selling the product. The ones that use formal borrowing, and maybe savings. The categories are not disjoint, but the size of the cell could be very small otherwise.

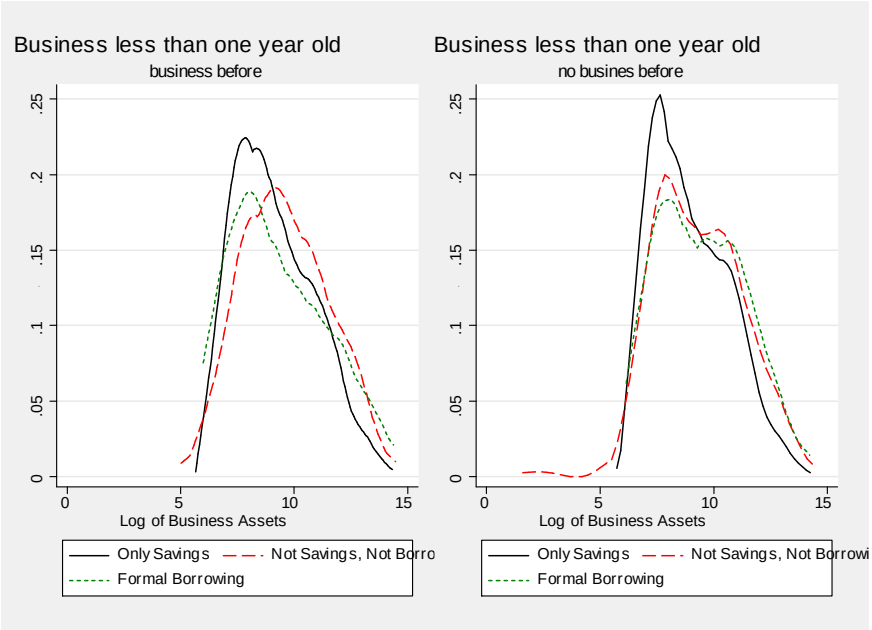
Using these categories we can plot the distribution of wealth (wealth in t-1) for each one of them. In general, we cannot observe big differences, this hold for households with business before, or without business before.

Figure 12:New entrepreneur by type of financial access



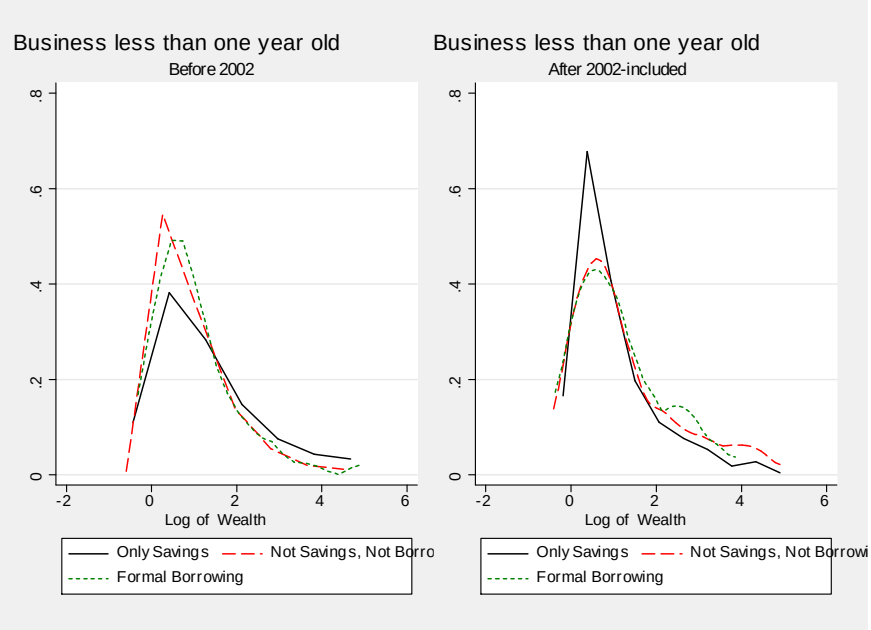
We cab also take a look to differences in the amount of assets they buy. It seems that households using only savings to buy the assets, have smaller business.

Figure 13:Size of new firms by financial access



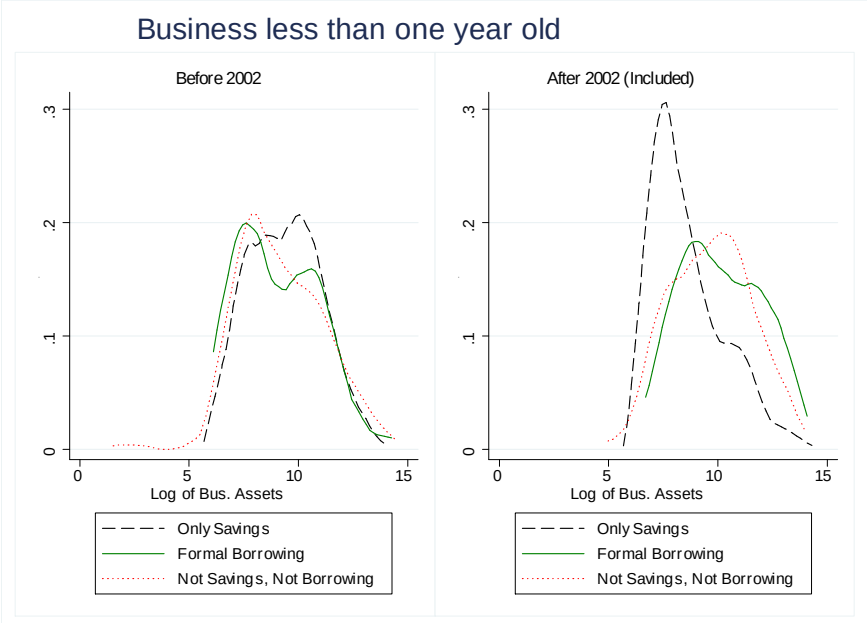
The next step was to divided the sample in before 2002 and after 2001. The graph (Figure 14) for wealth distribution shows, we can observe that there is some change in the households that used only savings, these are poorer after 2002.

Figure 14:New entrepreneur by type of financial access and before/after 2001



The most interesting result is that after 2001, people using only savings, probably money from the village funds, have clearly smaller businesses.

Figure 15:Size of new firms by financial access and before/after 2001



5 Conclusions

In this document we show descriptive statistics about the use of financial instruments in rural Thailand. We find that households use several instruments and we observe important changes in the use of formal and informal borrowing.

The introduction of a nation wide credit policy in 2002 decreased the number of households that relied on informal borrowings and at the same time increase the number of households savings. At the same time, we observe some interesting patterns in the new business form after 2001, finding that the size of the new business was smaller when using saving to finance business assets.

At the same time we observe a high correlation between having access to formal borrowing an wealth. Rich households have access to commercial banks, and the poor households borrow from informal sources. It is the case also that households that do not borrow are not as poor as households that borrow informally.

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