



Impact of Micro-credit on Poverty and Inequality: The Case of the Vietnam Bank for Social Policies?

Nguyen Viet Cuong

National Economics University

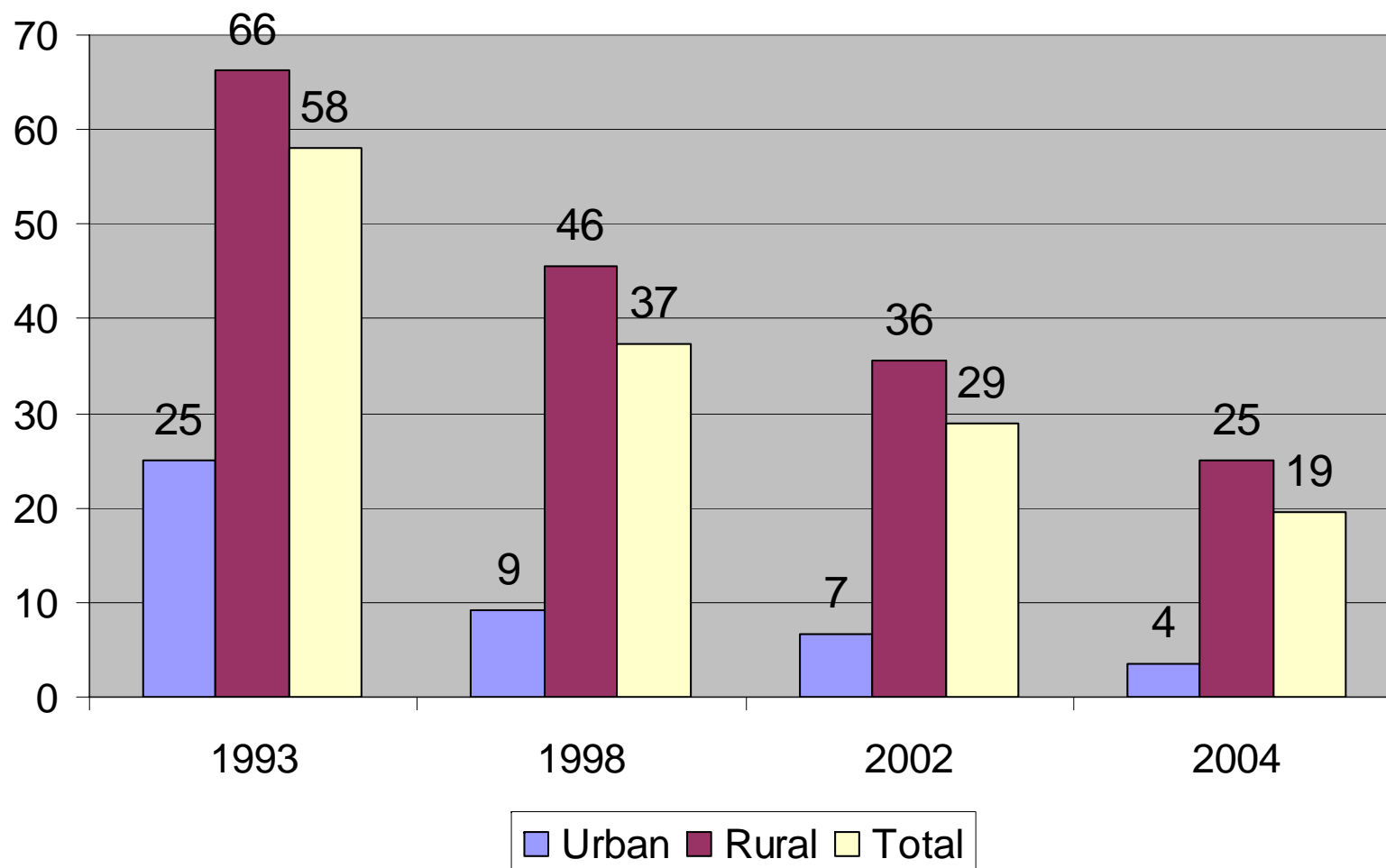
Hanoi, Vietnam



Presentation outline

- Research objectives.
- Data sources.
- Borrowing from the micro-credit program.
- Poverty targeting of the program.
- Impact evaluation methods.
- Program impacts.
- Conclusions.

Poverty rate in Vietnam (%)



Source: Estimation from VHLSSs



Research background and objectives

- Since early 2003, the government has launched Vietnam Bank for Social Policies (VBSP) to provide micro-credit at low interest rate for the poor without collateral.
- Large money has been spent in the program.
- However, questions on targeting and impact of the program remain unanswered.
- The main objective of the study is to assess the program's targeting and impact on household welfare, poverty and inequality.



Data sources

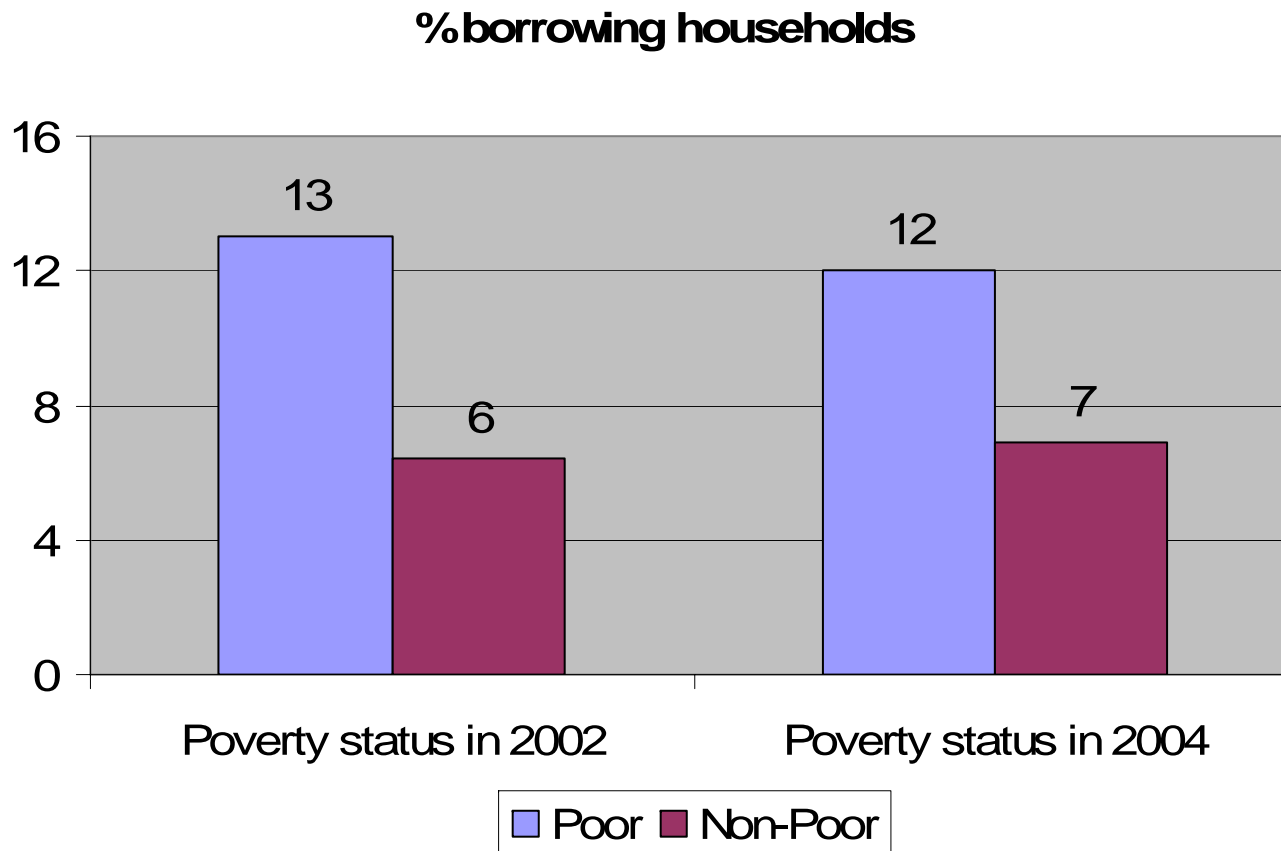
- Vietnam Household Living Standard Survey (VHLSS) in 2002 and 2004 collected detailed information on commune and household characteristics.
- The 2002 and 2004 VHLSSs cover 30000 and 9000 households, respectively. These surveys set up panel data of 4000 households, which are representative for urban and rural areas.
- The paper focuses on rural population, since (i) the 2004 VHLSS did not collect information on commune variables in urban areas, (ii) Poverty in Vietnam is mostly a rural phenomenon, with 95 percent of all poor living in rural areas.



Steps in borrowing from VBSP

- Firstly, a household should join a credit group.
- Once being a group member, the household sends application letter for borrowing to the credit group.
- The credit group verifies the list of applicants, and sends it to the People's Committee in that commune.
- The People's Committee approves the list, and sends it to the nearest branch of the VBSP bank.
- If the bank accepts the list, the household will receive the loan.

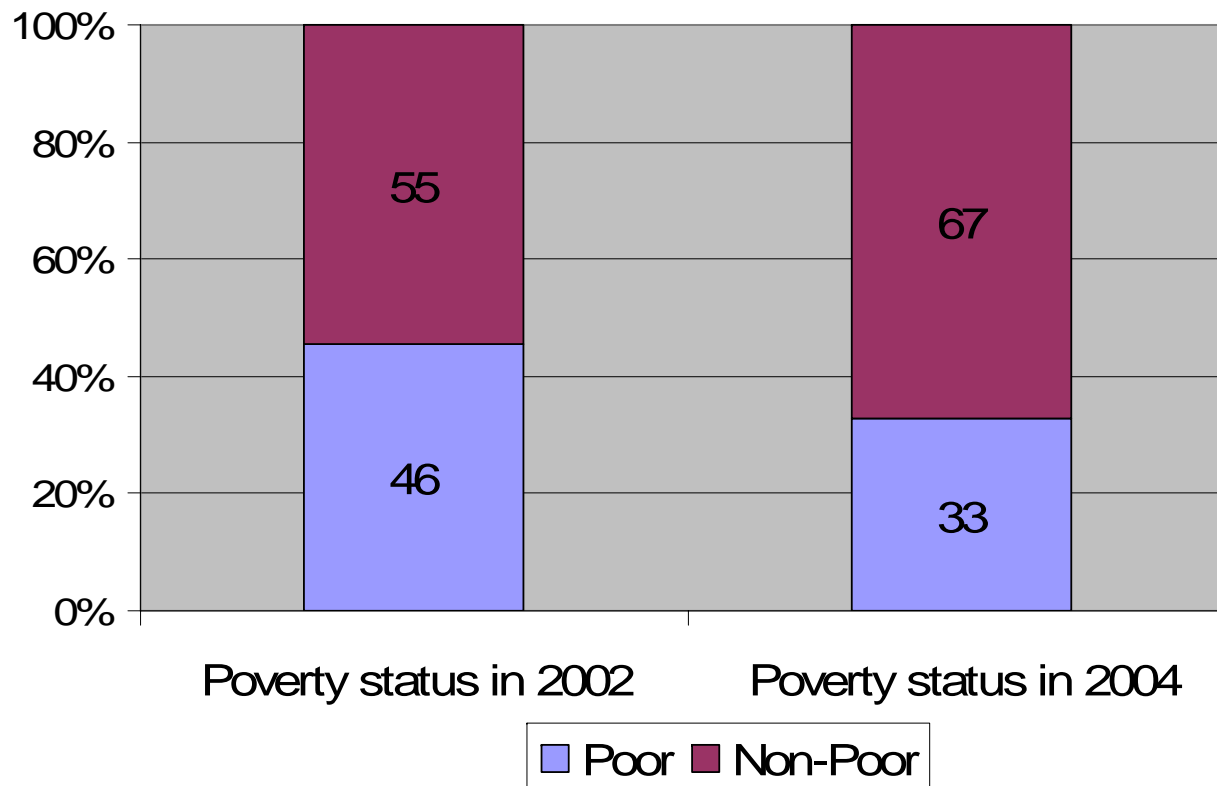
Poverty targeting of the program



Source: Estimation from the panel data VHLSS 2002-2004

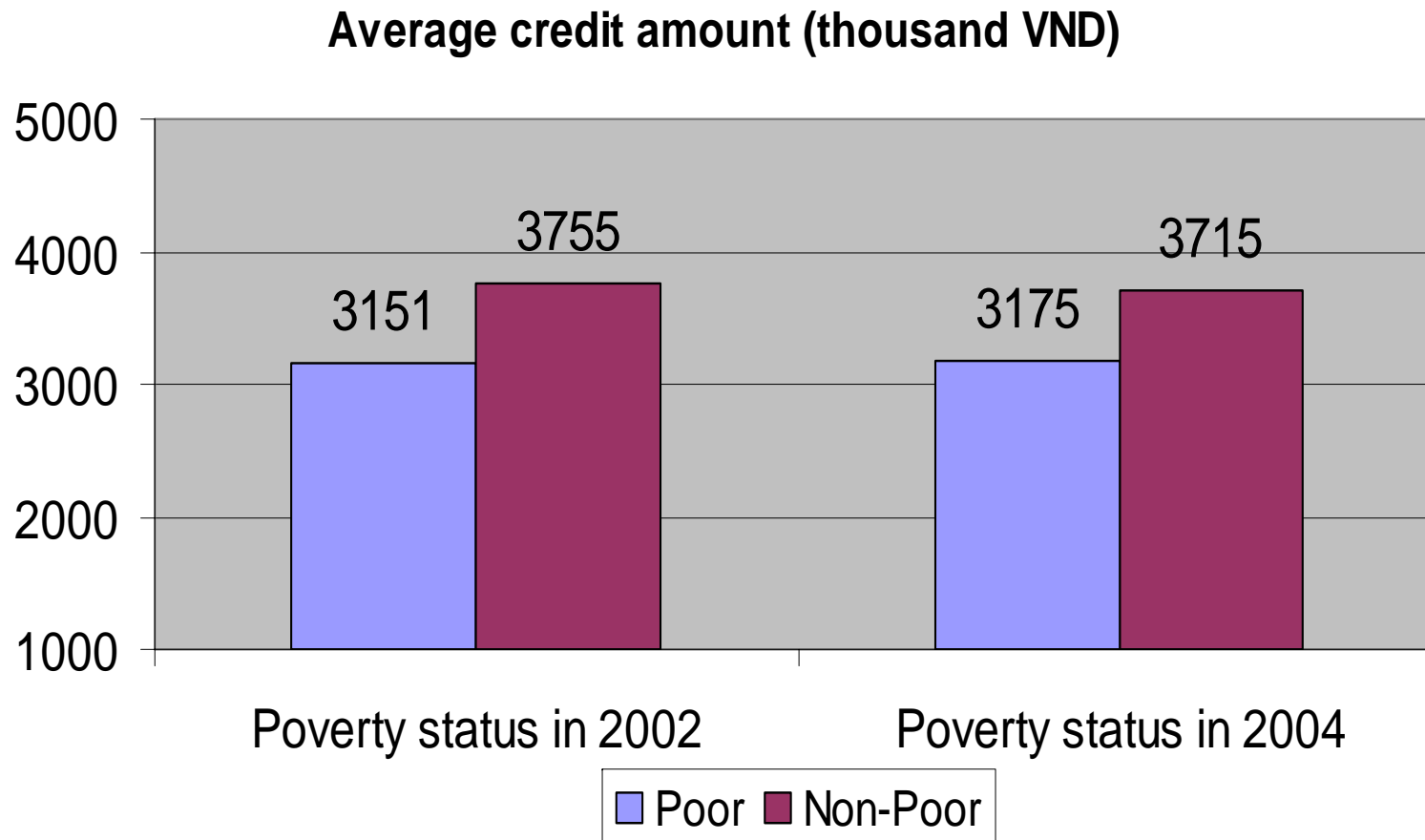
Poverty targeting of the program

Distribution of borrowing households (%)



Source: Estimation from the panel data VHLSS 2002-2004

Poverty targeting of the program



Source: Estimation from the panel data VHLSS 2002-2004



Poverty targeting of the program

- Poor targeting since:
 - Credit group and People's Committee are reluctant to include very poor households in the borrowing list. Very poor households might have low repayment capacity.
 - The poor often have low education degrees, limited production skills and market information. Without capacity of business and production, the poor might be less active in applying for loan.



Methods of impact evaluation

- Parameters of interest:

- Average treatment effect on the treated (ATT):

$$ATT = E(Y_1 - Y_0 | D = 1)$$

- where:

Y_1 is potential outcome in the presence of the program.

Y_0 is potential outcome in the absence of the program.

D is program participation, $D = 1$ for participants, 0 otherwise.



Methods of impact evaluation

- Parameters of interest:
 - When the program provides continuous treatment for recipients, we can define the Average Partial Effect on the Treated:

$$APET_{(D^c)} = \frac{df_{D^c > 0}(D^c)}{dD^c}$$

- where:

D^c is the continuous program variable, i.e., size of loan that a household obtains.

$f_{D^c > 0}(D^c)$ is a function of treatment effect on the treated.



Methods of impact evaluation

- Semi-log function of outcome:

$$\ln(Y_i) = \alpha + X_i\beta + D_i\theta + X_iD_i\gamma + \varepsilon_i$$

- where:

Y is outcome variable.

D is program variable which can be binary or continuous.

X are conditioning variables.



Methods of impact evaluation

- When D is binary, the estimator of ATT:

$$ATT = \hat{E}(Y_{i1} | D_i = 1) - \hat{E}(\hat{Y}_{i0} | D_i = 1)$$

$$= \frac{1}{n_p} \sum_{i=1}^{n_p} \left\{ Y_i - \exp[\ln(Y_i) - \hat{\gamma} - X_i \hat{\theta}] \right\}$$

- When D is continuous, the estimator of APET:

$$APET = \frac{1}{n_p} \sum_{i=1}^{n_p} \left[Y_i (\gamma + X_i \hat{\theta}) \right]$$

where n_p is the number of participants.



Methods of impact evaluation

- Impact of the program on poverty of the participants is measured by the difference in poverty indexes in the presence and absence of the program:

$$\Delta_{P_\alpha} = P_\alpha(D = 1, Y_1) - P_\alpha(D = 1, Y_0)$$

- P_α are FGT poverty indexes including poverty rate, poverty gap and severity indexes.
- Similarly, we can measure program impact on inequality of rural population:

$$\Delta_I = I(Y) - I(Y_{(D=0)})$$

- I are inequality indexes including Gini, Theil T and Theil L.



Methods of impact evaluation

- The main problem in estimating the model is the endogeneity of program participation. Borrowing can be correlated with unobserved characteristics of households, such as motivation for higher income or abilities in business.
- The fixed-effect regression is used to solve the problem. The method assumes that the unobserved variables which were correlated with program were time-invariant during the period 2002-2004.

Program impact: ATT

Outcomes	Y ₁ (Observed outcome)	Model 1		Model 2	
		Y ₀	Y ₁ – Y ₀ (ATT)	Y ₀	Y ₁ – Y ₀ (ATT)
Per capita expenditure (thousand VND)	2743*** [95]	2575*** [90]	169*** [61]	2566 [87]	177*** [66]
Per capita income (thousand VND)	3476*** [148]	3220*** [162]	256** [121]	3253*** [145]	223** [112]

* significant at 10%; ** significant at 5%; *** significant at 1%.

Source: Estimation from the panel data VHLSS 2002-2004



Program impact: APET

Outcomes	APET	
	Model 1	Model 2
Per capita expenditure (thousand VND)150	0.0423*** [0.0151]	0.0486*** [0.0164]
Per capita income (thousand VND)	0.0530* [0.0307]	0.0900** [0.0374]

* significant at 10%; ** significant at 5%; *** significant at 1%.
Source: Estimation from the panel data VHLSS 2002-2004

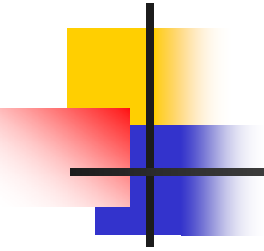
Program impact: poverty and inequality

Index	With VSBP (observed)	Model 1		Model 2	
		Without VSBP	VSBP effect	Without VSBP	VSBP effect
<u>Poverty</u>					
P0	0.3865*** [0.0335]	0.4265*** [0.0333]	-0.0399** [0.0208]	0.4079*** [0.0395]	-0.0214* [0.0132]
P1	0.0919*** [0.0104]	0.1101*** [0.0112]	-0.0182*** [0.0060]	0.1041*** [0.0114]	-0.0122* [0.0071]
P2	0.0328*** [0.0051]	0.0406*** [0.0056]	-0.0078*** [0.0026]	0.0372*** [0.0053]	-0.0044* [0.0025]
<u>Inequality</u>					
Gini	0.2881*** [0.0052]	0.2894*** [0.0052]	-0.0012*** [0.0004]	0.2890*** [0.0044]	-0.0009* [0.0006]
Theil L	0.1365*** [0.0050]	0.1376*** [0.0050]	-0.0012*** [0.0004]	0.1371*** [0.0043]	-0.0007* [0.0004]
Theil T	0.1427*** [0.0064]	0.1439*** [0.0065]	-0.0012*** [0.0004]	0.1436*** [0.0053]	-0.0009* [0.0005]



Conclusion

- Although the program was pro-poor, it did not reach the poor well:
 - It covered only 12% of the poor households.
 - Among the participants, the non-poor accounted for 67%.
- Positive impact of the program is found on households' expenditure and income per capita.
- The program also reduced the poverty incidence of the participants by around 4 percentage points. It also helped decrease poverty gap and severity indexes by around 18 percent.
- The program also had positive impact on inequality reduction, albeit at a very small magnitude.



Thank you very much!