

Formal versus Informal Credit: Which is Better in Helping Rural Areas in Vietnam?

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Abstract

The study seeks to evaluate the impacts of three types of credit – formal, semi-formal, and informal credits – on the well-being of households in Vietnam’s rural areas. Based on data from the Vietnam Household Living Standard Surveys in 2014 and 2016, the research uses the instrumental variable fixed-effect models to estimate the effects of three kinds of credit on household’s per capita income and expenditure. There are some significant findings. First, in rural areas, formal credit is the most popular source with stable and cheap borrowing costs. Informal credit is a complement to formal credit to meet urgent needs. Funding agriculture activities is the most commonly cited purpose of borrowing, followed by purchasing assets. The highest misuse rate belongs to the group of loans for agriculture production. Second, the results show that credit helps smoothen consumption rather than generate income for rural households. Three types of credit have insignificant or negative effects on household’s per capita income. Formal loans significantly improve total expenditure and spending on healthcare and education. Informal and semi-formal credits show a little influence on consumption. Informal loans have a significantly positive effect on healthcare expenditure. In contrast, having semi-formal loans tends to decrease spending on foods.

Keywords : Formal Credit, Informal Credit, Semi-Formal Credit, Income, Expenditure

JEL Classification Code: C33, G21, G23, O16, R22

1. Introduction

According to Negeri (2018); Nguyen, Nguyen, and Ho (2018), savings and subsidies have not contributed to a clear economic well-being improvement of the households, especially in rural areas. Therefore, credit plays a critical role in improving the wellbeing of households in developing countries. Access to credit affects household welfare through two key channels (Diagne, Zeller, & Sharma, 2000). First,

it alleviates capital constraints, significantly improving households’ ability to acquire needed agriculture inputs and capital-intensive assets, encouraging labor-saving technology, and raising labor productivity (Mago, 2014; Nguyen & Nguyen, 2019). Second, the availability of credit to households increases their risk-bearing capacity and alters their risk-coping strategies (Pienkhuntod, Amornbunchornvei, & Nantharath, 2020; Senadjki, Mohd, Bahari, Abdul, & Hamat, 2017). Households with access to credit are more likely than those without such access to pursue promising, but risky technologies, and will be better able to avoid risk-reducing, but inefficient livelihood strategies.

In Vietnam, there are more than two-thirds of the population living in rural areas. Rural areas are also places where almost Vietnam’s poor households live. The demand for credit among the rural population is considered huge and diverse. However, like elsewhere, the poor and farmers in Vietnam have difficulties in accessing formal credit channels (i.e., loans from banks and other financial institutions) because of low financial literacy, poor commune-level banking infrastructure, insufficient collateral for loans, and lack of means to service loans (DFC, 2007). An alternative for borrowers is to get loans from informal sources, including

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family, friends, neighbors, moneylenders, credit cooperatives, and associations (Karaivanov & Kessler, 2018). Unlike formal institutions, informal lenders rely on borrowers' relationship and reputation to make loans. They also are usually better informed about the personal circumstances of borrowers and have lower monitoring and enforcement costs. Borrowers feel comfortable with less procedure, flexible credit terms, and quick processing time. Typically, loans from friends have very favorable terms and most family loans are interest-free (Collins, Morduch, Rutherford, & Ruthven, 2010)

While the barriers of formal credit have not been removed, informal credit continues its complementary role to the mainstreaming financial system and absorbs the unmet demand from the formal market. Given the coexistence of both types, however informal credit, due to its informality, is not well investigated and its effects on household wellbeing are questioned. This study investigates and compares the impacts of formal and informal credits on the welfare of households in Vietnam's rural areas. The research focuses on two sub-questions. First, how formal and informal credit improve well-being measures such as consumption, education, and healthcare? Second, does formal credit outperform informal credit in supporting households? This study is expected to contribute to the limited existing quantitative empirical evidence on the roles of both formal and informal credit and policy implications. The remainder of the research is structured into four parts. The second part is a literature review, followed by the evaluation method. The findings and conclusions are presented in the last two parts.

2. Literature Review

2.1. Rural Credit Market in Vietnam

Currently, the rural credit market is segmented into three sectors: informal, semiformal and formal (see Figure 1).

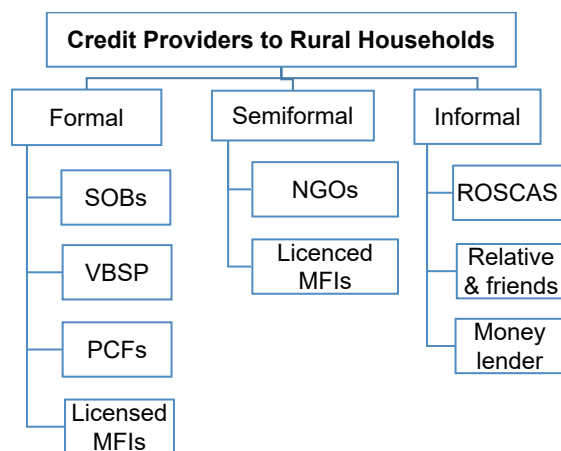


Figure 1: Structure of Credit Market for Vietnam's Rural Households

2.1.1. Formal Credit Providers

In the formal sector, institutions such as the Bank of Agriculture and Rural Development (Agribank), the system of People's Credit Funds (PCFs), Vietnam Bank for Social Policies (VBSP) and two licensed microfinance institutions (TYM and CEP) are the leading formal providers in rural areas. Agribank is the first formal bank in Vietnam that specialized in serving rural areas and small and medium enterprises engaged in agricultural activities. Other commercial banks such as Lien Viet Post Bank and BIDV have recently shown their interests in the microfinance industry. The new entry of these banks increases the competition and the diversification of products in this market segment. The network of PCFs was founded in 1993 to provide financial services to communes, following the basic principles of cooperatives as self-help and mutual support. By 2010, there were 1,042 PCFs in over 10 percent of communes, serving approximately 1.7 million members, of which 50 percent were from lower-income households (Nguyen & Le, 2013). In 2013, the central PCF was transformed into Cooperative Bank but the network of local credit funds still operates as usual.

The VBSP is currently the biggest microfinance provider serving 7 million clients (including depositors and borrowers) of which 6.1 million are from poor households. VBSP owns the largest network of branches covering 99 percent of communes (11000 communes) of 631 districts of 64 provinces nationwide (VBSP, 2019). Being the government's policy credit provider, VBSP is responsible for implementing programs on business, electricity, housing, safe water, education tuition, and employment with the focus on poor and near-poor households, minority ethnicities, and disadvantaged people. The preferential loans from VBSP do not require collateral and are highly subsidized. The nominal borrowing rate is at about half of the "market" rates charged by most of the other microfinance programs and even the real interest rate was negative in some periods (DFC, 2007; Nguyen & Le, 2013) (see Table 1).

2.1.2. Semi-formal Credit Providers

The semi-formal sector is occupied by non-licensed national programs, microfinance programs, and saving and credit schemes supported by NGOs and donors. The client base is local-focused from a few thousand to 20,000 people for each institution and women account for 90 to 100 percent (Nguyen & Le, 2013). These providers offer under VND 10 million loans on the group-lending scheme and require participants to make frequent compulsory savings as a condition for accessing micro-credit. The coverage of semi-formal credit is still limited in small and dispersed communities and the total number of borrowers accounts for less than 1% of total borrowers (ADB, 2010). Furthermore,

Table 1: Characteristics of Formal Lenders to Rural Households in Vietnam

Features	VBSP	VBARD	PCFs	Licensed MFIs
Model	Policy bank	Commercial bank	Financial cooperative	Non-bank, limited liability company
Objectives	Non-profit, for policy missions required by the government	Profit	Mutual benefit among members	Self-sustainability and social missions
Main funding sources	State budget	Deposit and non-deposit mobilization from public	Savings mobilization from public and members	Savings mobilization from public and members; external funds from donors
Lending products	Programs designed by the government to specific beneficiaries	Based on customers' demands and credit institution law	Lending to members only. Based on members' demands and credit institution law	Based on members' demands and credit institution law
Lending methods	Credit and savings group	Individuals, pilot group lending in some places	Individuals	Joint-liability group lending
Main market segment	The policy beneficiaries (the poor and disadvantaged group)	High and medium-income households, all types of enterprises, focusing on rural and suburban areas	Medium to low-income householders, microenterprises, small and medium enterprises	Low-income and near-poor households
Coverage	Covering 99 percent of communes (11000 communes) of 631 districts of 64 provinces nationwide	2,300 branches and transaction offices in all 64 provinces	1,181 PCFs in over 57 cities and provinces. In 2013, Central PCF transformed into Cooperative bank of Vietnam with 25 branches	Not many, mainly in disadvantaged and suburban areas

Sources: Nguyen & Le (2013), VBSP (2019)

the capacity of semi-formal institutions mainly relies on technical assistance from political and social organizations such as woman union, youth union, and farmer union. Thanks to this, the poor and women are reached by these institutions and less likely to be excluded. However, semi-formal institutions still encounter high operating costs and limited outreach due to their small scale.

2.1.3. Informal Credit Providers

The informal credit providers include moneylenders, rotating savings and credit associations (ROSCAs), pawnshops, relatives, and friends. The simple and quick procedure is the most attractive feature for the participants especially in urgent needs of cash. Conventionally, relatives and friends are the first sources of credit that households seek when they have income shocks or unexpected events. Free interest rate, prompt delivery, flexible duration and payment schedule are the characteristics of loans from family and friends (Tran, 1999). However, the amounts of borrowings depend on the lender's financial capacity, which is limited

for low-income families; therefore, the lenders can only lend small amounts to their close relatives and friends (Lainez, 2014). If borrowers are rationed out by family and friend sources, they have to rely on moneylenders or traders for their emergency expenditures such as illness, funeral, and wedding.

Moneylenders in rural areas often live in the same communes with borrowers and may provide loans in the form of cash or goods. They can be permanent or seasonal lenders. They do not require collateral and offer flexible terms of payment but usually charge high-interest rates. Moneylenders have their own methods to force borrowers to repay. In Vietnam, loans from money lenders are often known as "black credit" which has a negative connotation that transaction is dubious (Lainez, 2014; Tran, 1999). Households are reluctant to report their loans from moneylenders because this implies they are in not good financial standing.

A rotating savings and credit association (ROSCA) is known under different names such as "Ho" in the North, "Phuong" in the Middle and "Hui" in the South. A ROSCA consists of members who know and trust each other and who

contribute property to form a periodic saving and lending process (Lainez, 2014). Interest rate, loan amount, and distribution are determined by mutual agreements among members and group leaders or by bidding. The scale of ROSCAs varies, depending on the number of members and members' fund contribution. Since ROSCAs' operations are not regulated, the right and liability of members are not protected by Law. When an association collapses due to borrowers' defaults, all members have to suffer the loss (Lainez, 2014) (see Table 2).

2.2. Previous Studies on Credit in Rural Areas in Vietnam

There are some quantitative studies on the impacts of credit on poverty in Vietnam. Using the cross-sectional data from two Vietnam Household Living Standard Surveys (VHLSSs) 1993 and 1998, Quach, Mullineux, and Murinde (2005) analyzed the effect of total borrowing from both formal and informal sources on household welfare. It was found that household borrowing was driven by the age of household head, household size, land ownership, savings and credit availability at village levels. Quach, Mullineux, and Murinde (2005) showed significant and positive impacts in terms of per capita expenditure, per capita food expenditure and non-food expenditure. Especially for poorer households, credit had a greater positive effect on economic welfare. Continuing the topic, Nguyen (2008) used the data from the two VHLSSs in 2002 and 2004 to study the impacts of the governmental micro-credit program, which was implemented through VBSP for the poor. However, he found that the program in the period 2002-2004 did not target well at the poor as 67.1 percent of the participants were non-poor households. Only 12 percent of poor households in rural areas participated in the program in 2004 and received a smaller amount of credit

than non-poor households. For participating households, the program generally had positive and statistically significant impacts on consumption and income per capita, the poverty rate, poverty gap, and poverty severity.

Moving on to the role of informal credit, Nguyen and van den Berg (2014) evaluated its impacts on poverty and equality. First, informal credit was confirmed to be an important source of finance for the poor in Vietnam. The statistics from VHLSS 2004 and 2006 in this study showed that informal sources were more popular to the poor than to the non-poor. In 2006, 21 percent of poor households and 15 percent of non-poor households borrowed from informal sources (Nguyen & van den Berg, 2014). Loans from friends, relatives, and families were more prominent than loans from private moneylenders and accounted for 76 percent of total informal loans. They found that the effect of credit from friends and relatives on per capita expenditure was positive but not statistically significant. Loans from private moneylenders had a positive and statistically significant effect. Borrowing from private moneylenders increased per capita expenditure by around 15%, then decreasing the poverty measures and income inequality. Interestingly, they found empirical evidence that informal credit, especially from private moneylenders, could be an effective tool to increase household welfare, and reduce poverty and inequality.

Focusing on another aspect of poverty, Lensink and Pham (2012), using VHLSSs 2004 and 2006, evaluated the effects of micro-credit on household self-employment profit in Vietnam. They found that the VBSP micro-credit programs enhanced household self-employment profits and exhibited some poverty-reducing effects with the evidence on stronger positive impacts for the poorest households. The study suggested that access to credit primarily affected profit by enhancing labor productivity and allowing more risk-taking. However, they did not find direct effects of credit

Table 2: Characteristics of Informal Lenders to Rural Households in Vietnam

Features	Relatives, friends, and neighbors	Moneylenders	ROSCAs
Purposes of borrowings	Repairing or building houses, emergency consumption such as illness, funeral, and weddings, rarely buying input for production	Various purposes	Various purposes
Collateral	Not required	Not required	Not required
Amount	Limited	No limited	Limited
Type of loans	Cash or goods (paddy, gold, and fertilizers)	Cash	Cash
Duration	Loan in cash (3,6 or 9 months) Loan for building (1-2 years)	Short-term (several days, weeks)	Usually less than 1 year
Terms	Repayment is easy to be rescheduled in case if needed	Diversified, flexible and timely	Depends on agreement among members
Interest rate	Very low or free	Very high	High

Source: Lainez (2014), Tran (1999)

access on fixed investments of consumption expenditures. Comparing formal and informal rural credit, Barslund and Tarp (2008) used a survey of 932 rural households. They found that households obtained credit through formal and informal lenders. Formal loans were almost entirely for production and asset accumulation, while informal loans were used for consumption smoothening.

In summary, up to now, the studies have mainly focused on evaluating formal microcredit programs on poverty measures. The sample was confined to the poor and near-poor population or the beneficiaries of specific programs. Second, the comparison of the effects of different types of credit has not well-studied. Especially, semi-formal and informal credits were defined as one group. Third, the above-mentioned studies used the data up to 2012 so the results have limited or no implications for current policies. This study is expected to contribute to the limited existing quantitative empirical evidence on the roles of formal, semiformal and informal credit and the policy implications.

3. Methodology

3.1. Dataset

The research uses the data from the Vietnam Household Living Standard Surveys (VHLSSs) in 2014 and 2016. The survey was conducted every two years by the General Statistical Office of Vietnam with the technical support of the World Bank. The sampling frame was based on the 2009 Population and Housing Census of Vietnam. Each survey covers 9,399 households, which are representative of the national, regional, and rural and urban levels. In our study, we focus on rural areas. The VHLSS 2014 has a sub-sample of 6618 rural households and the VHLSS 2016 has a sub-sample of 6570 households living in rural areas. From two sub-samples, we can extract a panel data of 3039 rural households in two years 2014 and 2016. The attrition rate of panel data is small, about 8%, mainly due to migration. Therefore, households in the panel data still represent the population and the attrition problem is not serious.

The VHLSSs provide detailed household information, including demography, income, expenditure, education, health, employment, assets. Data on expenditure was collected on sub-categories such as food expenditure and non-food expenditures on healthcare, education, housing, and durables. In the survey, households were asked questions on the sources of borrowings, the amount of borrowing and associated interest rates.

3.2. Econometrics Models

The main problem in estimating the impacts of credit on household wellbeing is the endogeneity problem. Pitt and

Khandker (1996) outlined the sources of endogeneity. First, credit could not be randomly allocated as lenders, especially formal lenders, lend money based on local socio-economic conditions (e.g., poverty incidence). Second, even if credit is allocated randomly, unobservable local and household attributes may affect both household demand for credit and household welfare. To overcome this problem, the research uses the fixed effects models with instrumental variables (IV) for the panel data. Using fixed-effect transformation can remove bias due to time-invariant factors while IV can cope with an endogenous problem due to time-variant terms (Khandker, Koolwal, & Samad, 2009).

This study divides the credit sources into three types: formal credit (including Social Policy Bank, Bank of Agricultural and Rural Development, State-owned Commercial Bank and Private Banks), semi-formal sources (including local government, Farmer's association, Veteran's Association, Women's Association, People's credit funds, and other credit institutions), and informal sources (including businessmen, private creditors, friends/relatives, and others). The study evaluates the impacts of formal, semi-formal, and informal loans on household well-being based on the fixed effect models with IVs as follows:

$$Y_{it} = \beta_0 + F_{it}\beta_1 + X_{it}\beta_2 + u_i + \varepsilon_{it}$$
$$F_{it} = a_0 + Z_{it}a_1 + X_{it}a_2 + \eta_{it}$$

Y is the well-being measure that is a logarithm of either per capita income or per capita expenditures and its sub-categories. Per capita means average among household members. X is a vector of household control variables. F is a vector of credit dummy variables. Z is a vector of IVs for credit forms, and are time-invariant and time-variant unobserved terms.

The research uses the popularity of a loan type in the commune and its interaction with other exogenous variables as the IVs for credit. The popularity of a typical credit source is measured by the proportion of households in the commune having access to the corresponding credit. The key consideration for choosing IVs is that they must have a strong correlation with the endogenous variables, but have no causal effect with dependent variables. The availability of credit form affects household access and usage but does not directly affect household wellbeing. The popularity of a credit type is expected to be a valid IV and according to Wooldridge (2010), the interaction of IV with other control variables can be a valid instrument. To test for weak instruments, we use the test that is proposed by Stock and Yogo (2005). In the test, the null hypothesis that instruments are weak is against the alternative that they are strong. In addition, the validity of IVs is also tested in the Sargan-Hansen test of over-identifying restrictions. The joint null hypothesis is that the instruments are valid instruments, i.e., uncorrelated with the error term and

that the excluded instruments are correctly excluded from the estimated equation. Another concern with the above-proposed model is that endogenous variables are dummy variables, which may lead to problems with point estimates and standard errors of coefficients. According to Angrist and Pischke (2008), this issue is not significant and the inference is still reliable.

4. Results and Discussion

4.1. Access to Credit in Rural Areas versus Urban Areas

In previous studies, there are disagreements about the coverage of formal and semi-formal credit versus informal credit. Some argue that informal credit plays a dominant role, whereas others claim that formal credit is the main source. Table 3 shows the coverage of each credit type in both rural and urban areas.

The statistics for 9,339 households each year show that there are two-thirds of households living in rural areas. Among rural families, about 36-37% have at least one loan. The proportion is much lower among urban households with only 20% having borrowings. Formal credit is the most popular source of borrowings for both rural and urban borrowers. 79-80% of rural borrowers and 68-73% of urban ones had loans from banks and other financial institutions. Informal source ranks second in terms of popularity with the shares in rural and urban areas being 18% and 22% in 2014 and 2016 respectively. Accounting for less than 14% of the market share in each area, semi-formal credit is the least popular and shows a declining trend over two years.

The average borrowing amount and cost of a household is varied across types of credit and areas. On average, a household has a larger-sized formal loan than an informal loan and semi-informal loan. The average loan size in rural areas is smaller than in urban areas. Specifically, in 2016, a rural borrower borrows an average of VND 67.54 million from formal sources while an urban borrower has a formal loan of VND 161.36 million. Meanwhile, an average amount of informal loan for a rural borrower is VND 52.14 million and that for an urban one is VND 101.5 million.

The value of the semi-formal loan is approximately half of that of an informal loan. It also can be seen in Table 4 that the interest rate of formal credit was lower in rural areas than in urban areas. In 2014, the average borrowing cost of rural borrowers from formal sources is half of that of urban borrowers. In 2016, the interest rate gap is narrower but still significant. In addition, in rural areas, the cost of borrowing from formal sources is lower than that from informal sources, whereas the former is higher than the latter in urban areas. This contradiction could be due to the fact that the popular informal sources among rural dwellers are moneylenders and ROSCAs (i.e., Ho, Hui, and Phuong) who usually charge higher interest rate than formal credit providers do and that interest-free borrowings from relatives, friends or neighbors are more widespread in urban areas. In addition, rural areas where the poor and farmers concentrated enjoy cheap policy loans or government-subsidized loans that are distributed by VBSP and Agribank. In contrast, formal credit for urban citizens is mainly from commercial banks so borrowing rates are market-driven.

Table 3: Credit Market in Rural and Urban Areas

	Rural Areas				Urban Areas			
	2014		2016		2014		2016	
	No.	%	No.	%	No.	%	No.	%
Total Households	6,618	100%	6,570	100%	2,781	100%	2,829	100%
Having at least one loan	2,424	37%	2,350	36%	553	20%	580	21%
<i>of which</i>								
Having formal loan	1,915	79%	1,868	80%	377	68%	421	73%
Having semi-formal loan	285	12%	237	10%	75	14%	63	11%
Having informal loan	476	20%	421	18%	128	23%	130	22%
On average, a household has	<i>Amount (millions)</i>	<i>Rate (%)</i>	<i>Amount (millions)</i>	<i>Rate (%)</i>	<i>Amount (millions)</i>	<i>Rate (%)</i>	<i>Amount (millions)</i>	<i>Rate (%)</i>
Formal loan	48.24	12.93	67.54	11.44	127.17	28.97	161.36	14.11
Semi-formal loan	27.55	9.14	36.41	13.09	61.75	25.81	67.49	11.69
Informal loan	37.06	22.44	52.14	10.84	77.72	17.94	101.5	9.85

Table 6: Estimation of the Impacts of Credit Types with the IV Fixed Effect Models

	Log of Per-capita Income and Expenditures							
	Income	Total Consumption	Healthcare	Food	Non-food Necessities	Housing, Electricity, Water, Waste Treatment	Education	Durables
Having informal loan, yes=1	-0.1819** (0.0623)	0.0826 (0.0497)	0.3557* (0.1459)	-0.0403 (0.0438)	0.0185 (0.0498)	0.0809 (0.1078)	-0.0417 (0.1116)	-0.0441 (0.3075)
Having semi-formal loan, yes=1	-0.1749** (0.0675)	0.0031 (0.0569)	0.2854 (0.2006)	-0.1463** (0.0508)	0.0368 (0.0621)	-0.0509 (0.1292)	-0.0704 (0.1427)	-0.0860 (0.4123)
Having formal loan, yes=1	-0.0738 (0.0387)	0.0734* (0.0311)	0.3750*** (0.1073)	0.0263 (0.0296)	0.0106 (0.0345)	0.1080 (0.0615)	0.1940* (0.0847)	-0.1009 (0.2655)
Proportion of Children in Household	-0.0643 (0.0976)	-0.2637*** (0.0794)	0.4359 (0.2461)	-0.2297** (0.0781)	-0.1613 (0.0857)	0.0169 (0.1873)	-0.8881*** (0.1754)	-1.2073 (0.6201)
Proportion of Elderly in Household	-0.2022* (0.0800)	-0.1312* (0.0621)	0.4945** (0.1808)	-0.0648 (0.0590)	-0.3231*** (0.0748)	0.0462 (0.1184)	-0.3390 (0.4469)	-0.4254 (0.4923)
Proportion of Members working in Agriculture Sector	0.3711 (0.3551)	0.6464 (0.3789)	0.0575 (1.4782)	0.0999 (0.3466)	1.0307 (0.6616)	0.3165 (1.1388)	0.0537 (2.6218)	4.7280 (3.1049)
Proportion of Members working in Industry Sector	0.5642*** (0.1310)	0.2429* (0.1189)	-0.3138 (0.3383)	-0.0996 (0.0946)	0.6054*** (0.1483)	0.4427* (0.1841)	-0.8278 (0.5305)	0.8402 (0.9175)
Proportion of Members working in Service Sector	0.3321*** (0.0570)	0.0876* (0.0430)	-0.2142 (0.1471)	0.0322 (0.0398)	0.2204*** (0.0542)	0.2067* (0.0854)	-0.9453*** (0.1752)	0.4452 (0.4019)
Household Size	-0.0608*** (0.0115)	-0.0969*** (0.0097)	-0.0617* (0.0298)	-0.0971*** (0.0089)	-0.0796*** (0.0102)	-0.1723*** (0.0195)	-0.1099*** (0.0295)	-0.1160 (0.0749)
Stock-Yogo test	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied
Sargan-Hansen test	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied	Satisfied
Observations	6068	6070	5720	6070	6070	5890	3056	1446
r2	0.0462	0.0685	0.0197	0.0703	0.0550	0.0394	0.0334	0.0211
F	15.3282	20.0717	4.2230	23.7127	18.2339	11.8988	8.3273	1.7543
Standard errors in parentheses				* $p < 0.05$	** $p < 0.01$	*** $p < 0.001$		

having an informal loan is 18.19% lower than that of households without informal loans. Similarly, households having semi-formal loans have average income being 17.49% lower than those having no one. Theoretically, access to credit enables borrowers to overcome constraints in production, participate in productive activities and then generate income. With about 50% of loans used for production purposes, it is expected that these loans, especially formal and semi-formal ones, improve household income. However, the estimated effects are contradicted with the expectation.

Regarding the unexpected outcome of credit on income, these are some possible explanations. First, approximately 80% of households in rural areas had access to formal loans, the majority of which are preferential loans that do not require collateral and are highly subsidized. Easy screening procedure and weak loan monitoring process in granting loans induce rural households to take loans without serious consideration of the repayment capacity and the profitability of investments. In this case, higher coverage of credit does not bring any expected outcomes. Second, it is noted above that loans for production activities, including agriculture and non-agriculture, have the highest rate of misuse. The popular misuse is to pay off other loans, to buy assets or to cover living costs. Typically, 30% of misused loans were used to repay other household's due debts. Clearly, these misused loans cannot provide any improvement in household income. Third, agricultural production is highly dependent on natural conditions, so there is a high risk of crop failure in the case of unfavorable weather conditions. Because the risk could not be fully assessed when loans are granted, an investment that seems to be profitable in the stage of loan approval could turn into a great loss in an extreme case. In addition, some agricultural activities often have long production cycles, depending on different types of crops or animals, so it takes a long time to recover initial investment and realize gains. Hence, income cannot be improved immediately.

4.3. Impacts of Types of Credit on Household Expenditures in Rural Areas

Table 6 presents the estimated impacts of different types of credits on household per capita expenditure and its sub-categories. Among three types of credit, only formal credit has a significantly positive effect on per capita consumption. Holding other factors fixed, having a formal loan can, on average, raise consumption by 7.34%. Two other kinds of credit have positive influences, but these effects are not statistically significant. For sub-categories of expenditures, formal credit remarkably increases expenditures on healthcare and education by 37.5% and 19.4% respectively. However, access to formal credit has no statistically significant effects on expenditures on foods, non-food items, housing, and durables. By comparison, access to informal credit only has a statistically significant influence on healthcare expenditures.

Getting an informal loan can increase spending on healthcare by 37.57%. Semi-formal loans have no significant positive effect on categories of expenditures; even they can decrease spending on foods by 14.63%.

It is noted above that about 50% of loans are used for consumption purposes. The rural households' demand for these loans is significant because their savings are very limited. If rural dwellers meet all requirements of formal lenders, they can get formal loans at reasonable prices although it takes a long time to process a formal loan application. For instance, VBSP has credit packages to help eligible borrowers cover education costs and healthcare fees. Hence, the borrowers are benefited from getting loans, leading to an increase in spending on education and healthcare. However, there are always a large number of borrowers who do not meet the minimum credit conditions of formal credit institutions and also who have a need for loans that are of a higher amount than that of semi-formal loans. So, there is no choice other than relying on moneylenders or black credit, especially in cases that they need immediate cash settlement (sickness or diseases, funeral or wedding). This is the reason why informal credit always coexists with formal credit and plays an important role in daily lives. Last but, not least, semi-formal credit seems not to achieve its mission in improving living standards. As seen above, semi-formal loans are unlikely to improve income and expenditure flows. In addition, they require frequent repayment, which forces households to save more money and spend less on daily needs.

5. Conclusions

Based on data from the Vietnam Household Living Standard Surveys in 2014 and 2016 and IV fixed-effect models, the research has some interesting findings. First, formal credit plays a prominent role in the Vietnam rural credit market, followed by informal credit and semi-formal credit. Informal credit is a complementary source to formal credit in helping families meet the needs of funding for production, asset purchase, healthcare cost, and education fees. The top-cited reason for borrowing among rural households is to finance agriculture production; however, loans for this purpose has the highest misuse rate. The problem may deter the effects of loans in improving income for households. Second, the research finds that credit is more likely to help smoothen household consumption than to help them generate extra income. Three types of credit show insignificant or negative effects on the household per capita income. On the other hand, formal loans significantly improve total expenditure and spending on healthcare and education. Informal and semi-formal credits show little influences on consumption. Informal loans have a significantly positive effect on healthcare expenditure. Having semi-formal loans tends to decrease spending on foods.

In brief, to achieve sustainable effects in the long term, improving income and smoothening consumption must go hand in hand. The above results give some policy implications. First, to increase the efficiency of loans in production activities, credit providers (banks, NGOs, microfinance institutions, etc.) need to (i) strengthen their advisory activities, so that households have plans to cope with adverse changes in the weather; (ii) extend the loan term to suit the investment needs in plants and animals, invest to diversify income instead of investing in purely agricultural sector; (iii) diversify conditions for securing loans to replace collaterals. To ensure the positive effects of loan in smoothening consumption, the credit programs should (i) provide training for customers on family financial management, so that they can use loans appropriately and routinely, and (ii) raise awareness among households, especially those in remote areas, about the nature of usury and emphasize the consequences for their families if they cannot repay their debts.

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