Macrothink Institute™

International Finance and Banking
ISSN 2374-2089
2014, Vol. 1, No. 2

Why do Small and Medium Enterprises Need to Access Informal Credit? The Case of Vietnam

Cao Thi Khanh Nguyet

PhD student of Graduate School of Economics, Kobe University

2-1 Rokkodai-cho Nada-ku, Kobe, Hyogo Prefecture, 657-8501, Japan

Email: 107e702e@stu.kobe-u.ac.jp

Received: September 17, 2014 Accepted: October 29, 2014 Published: December 2, 2014

doi:10.5296/ifb.v1i2.6695 URL: http://dx.doi.org/10.5296/ifb.v1i2.6695

Abstract

For Vietnamese SMEs, the informal credit channel is still the most familiar financing source despite government's efforts to widen access to formal credit. The present paper attempts to seek out new evidence to determine why SMEs' access the informal credit market after excluding firms that consider family as the most important informal source out of sample. The empirical results strongly support three following hypotheses: (1) Firms that cannot be satisfied through formal credit market choose to access informal credit; (2) Firms access informal credit, in part, to reduce application cost and to provide immediate access to credit to seize investment chances; (3) Good business environment enables SMEs to decrease their reliance on informal credit. Moreover, we found that small firms, and firms located in rural areas were more likely to use informal credit than others. Furthermore, a higher age of owner and a good business performance both help firms decrease their reliance on informal credit.

Keywords: SMEs, access to credit, informal credit, Vietnam

1. Introduction

In Vietnam, access to informal credit market is reported as the most familiar source of finance due, in part, to the banking system being still immature. The complex application procedure for formal credit increases the application cost and discourages SMEs from accessing formal credit, even if they could be satisfied in the formal credit system. In Vietnamese informal credit channel, there are three main sources: family/ relatives/ friends (we will call this group 'family'), private money lenders, and trade creditors. Due to the low interest rate charged, and the high flexibility of repayment conditions, borrowing from family is regarded as the first choice of SMEs business. Therefore, it is natural for SMEs to take advantage of family borrowing as an internal financing source, and to place their first priority on this finance source when lacking credit. When this source cannot meet their credit demands, they try to access banks, a formal credit channel; or private money lenders, another kind of informal credit channel. Despite higher interest, many surveys show that the informal credit channel, outside of the family, is more frequently used than the formal one. High dependence on private money lenders implies that access to formal credit remains narrow for SMEs. This issue has motivated policy makers to conduct more supportive programs to assist SMEs in accessing credit (Note 1). However, due to inconsistent policy system and lack of transparency, these policies are inaccessible to some enterprises.

Hence, there are two questions emerging from the above context: (1) Why do SMEs have to access informal credit? (2) Have the efforts of government in improving business environment for the private sector reduced the reliance of SMEs access to informal credit or not? Searching the answers to these questions is the focus of the research.

Previous researches have discussed intensively about the role of informal credit channel as well as the determinants of SMEs access to informal credit. With regards to the role of informal credit, Cong Ji (2009) considered informal credit to be the most useful channel that helps the financing of SMEs, which has driven the growth of SMEs. Informal credit is also regarded as the channel that serves SMEs, who are rationed out of the formal credit market (Tang, 1995; Safavian and Wimpey, 2007). Especially in Vietnam, where the banking system is still immature, informal credit allows fast growing enterprises to seize market opportunities (Rand, 2007). With regards to the determinants of access to informal credit, major influential factors such as formal credit constraints, age and size of firms, firm performance, location and owner characteristics have been clearly examined in the current literature (Safavian and Wimpey, 2007; Elmas Yaldiz et al, 2010; Nguyen and Luu, 2013). In an effort to investigate the impacts of a firm's usual environment on firms' access to informal credit market, Safavian and Wimpey (2007) analyzed the link between corruption, regulations and financial markets. They concluded that the regulatory environment is an important factor in borrowers' selection the informal market. However, as far as we have seen, there is very limited research has taken up family finance as a topic of special review; it is usually lumped together with private money lenders and trade creditors in one informal credit channel. Therefore, in the present paper, with the assumption that family is the source of first resort to overcome a lack of credit, and is not under any market regulation, we attempt to explore the determinants of access to informal credit, after excluding firms that consider family as the most important informal credit source. Moreover, we also investigate the impact of business environment on firms' access to informal credit.

Using the most update data set of Vietnamese SMEs survey and Provincial Competitiveness Index (PCI), we employ logistic model to test the three following hypotheses: (1) Firms that cannot be satisfied through formal credit market choose to access informal credit; (2) Firms access informal credit, in part, to reduce application cost and to provide immediate access to credit in order to seize investment chances; (3) Good business environment enables SMEs to decrease their reliance on informal credit. The empirical results show that firms that were not satisfied in the formal credit market are more likely to access the informal credit market. However, even some firms that could access formal credit, or have credit demands but did not apply for formal credit, and those conducting investment activities, all applied for informal credit to reduce application cost and seize investment chances. The positive impact of good business environment on reducing firm's reliance on informal credit was proved. Furthermore, we found that small firms, and firms located in rural areas were more likely to use informal credit than the others. Moreover, a higher age of owner helps firms to decrease their reliance on informal credit.

The study proceeds as follows. Previous studies are reviewed in section 2. Section 3 is data description. Section 4 presents background about Vietnamese informal credit channel derived from the data set. The empirical model as well as results interpretation is shown in Section 5. Section 6 concludes with some remarks.

2. Literature review

Up to now, numerous studies have been carried out worldwide in order to explore the core determinants of access to credit. Relating to access to credit, the theory of pecking order, agency cost, and trade off theory were presented and many scholars have relied on these theories to support empirical evidences. In one early paper, Donaldson (1961) stated that companies prioritize their sources of financing from internal financing to equity, according to the cost of financing. Modifying this model, Myers and Majluf (1984) suggested that internal funds are used first, and when it is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued. In order to explain the factors determining access to credit of SMEs, owner's characteristics, firms' characteristics, location, and ownership types are given (Rand, 2007; Thanh et al., 2011; Le, 2012). Related firms' credit worthiness, firm size, firm age, good financial statement, collateral asset have been proven to be useful proxies. Beck (2004) posited that large firms usually use formal external sources, and small firms usually use informal internal sources. Gertler (1988) stated that asymmetric information problems are likely to be especially serious for newly-established firms. Therefore, young firms are likely to seek finance from informal sources, whereas older firms have an advantage in searching for loans from banks. However, Rand (2007) proved that old firms are less likely to engage in risky and costly investment and requiring a huge amount of capital. Thus, they may seek formal sources of credit less often. By adopting pecking order theory, Le (2012) proved that old firms are more likely to finance themselves through their internal credit.

In terms of explaining the role of informal credit, Cong Ji (2009) stated that informal finance system is mainly based on "reputation and relationships" of borrowers. The author highlights that informal credit is considered to be an important system to complement inefficiency in the formal capital market. In detail, he based on three in-depth interviews and analyzed borrowing from family and friends, inter-dependence relationships with local government, problems related to trade credit factors as an important factor in Chinese informal financial systems. In informal financing from families and friends, a kind of "trustful relationship" to "transaction", once debt default occurs, the relationship immediately collapses. Therefore, it is extremely difficult for a firm to borrow again. In the relationship with local government, the author pointed out that local government are interested in supporting SMEs development in order to increase their profit (if they are also the executives of private enterprises) or their administrative power (through increasing local tax revenue and employment situation). In trade credit, if the clients repeat debt default for a long time, the number of enterprises demanding payment in cash will be increasing which causes greater damages to the business operations of SMEs. In spite of interesting findings, the study is restricted by data sets with a limited number of observations.

We also reached to a paper of Yaldiz et al. (2010) with the data set extracted from the Business Environment and Enterprise performance surveys (BEEPS), which conducted a survey with 14,107 firms from 34 countries. Informal credit was divided into three groups: family, private money lenders and trade credits but was lumped all together. The paper then concluded that determinants of borrowing from family/friends, money lenders are similar. It may be inappropriate if we draw the same conclusions when discussing SMEs' access to the informal market in the Vietnamese context due to the major differences in characteristics of family and private money lenders in Vietnam compared to other countries. In addition, several research on access to informal credit in Vietnam such as Tarp. F. (2008), Rand (2009), Nguyen and Luu (2013) for instance, did not exclude it out of the sample as we expected too. Hence, in this paper, we exclude firms that consider family as the most important informal credit source in order to explore new determinants of access to informal credit for Vietnamese SMEs.

With regards to the determinants of access to informal credit, factors such as formal credit constraints, age and size of firms, firm performance, location, owner characteristics have been discussed (Safavian and Wimpey, 2007; Rand, 2009; Yaldiz et al. 2010; Nguyen and Luu, 2013; Madestam, 2014; Yener, 2014). In an effort to investigate the impact of a firm's usual environment on firms' access to informal credit market, Safavian and Wimpey (2007) analyzed the link between corruption, regulation and financial markets. They concluded that the regulatory environment is an important factor in borrowers' selection in the informal market. In this paper, we also investigate the impact of business environment on firms' access to informal credit but integrate the factor with other determinants which have been discussed in previous research.

Most importantly, in this study, we used the most update survey data of SMEs and Provincial Competitiveness Index (PCI) data sets based on a large sample size to overcome the limitations of many prior studies. To our knowledge, this is a largest data set used in Vietnamese informal credit literature. It enables us to analyze based on direct survey questions related to access to informal credit in comparison with access to formal credit channel.

3. Data Description

The study uses two data sets. The first one is the survey data on Vietnamese Small and Medium scaled enterprises conducted in 2011, based on information collected for the year 2010. This survey was undertaken by the Central Institute for Economic Management (CIEM) of the Ministry of Planning and Investment (MPI), the Institute of Labor Science and Social Affairs (ILSSA) of the Ministry of Labor- Invalids and Social Affairs (MOLISA), the Economic Department of Copenhagen University, the United Nations University (UNU-WIDER), and the Embassy of Denmark in Vietnam with the purpose of identifying the Vietnamese business environment. The survey included a comprehensive survey of approximately 2,500 SMEs manufacturing enterprises in 10 provinces (Hanoi, Hai Phong, Ho Chi Minh, Ha Tay, Phu Tho, Nghe An, Quang Nam, Khanh Hoa, Lam Dong and Long An).

This data set is used for three main reasons. The first reason is the large sample size (2,449 non-state SMEs) covering all fields of manufacturing and most of the main regions in Vietnam. The second reason is its reliability; it was a survey that collected data over a long time, by experienced practitioners. With 132 questions, it was conducted through in-depth interviews carried out in two stages. In the first stage, enumerators went to the survey areas to identify the repeat enterprises and to obtain a complete list of enterprises from the local authorities. The second stage lasted for 2.5 months, and was carried out through personal visits and direct interviews. The 2011 sample is drawn from the same population identified in 2007 and 2009. The third reason is that it includes general factors and specific factors that can be used to analyze the determinants of SMEs' informal financing such as a firm's characteristics, investment, credits, and network strength. However, some direct information such as the amount of informal credit firm applied, the amount of informal credit obtained, the level of difficulty in accessing informal credit etc. are lacking. Also, inconsistencies in questions regarding time periods posed a difficult problem for analysis. For example, some data was collected over a two-year period (questions related to times of borrowing from informal credit, facing difficulties) and some data was collected over a one-year period (amount of investment, amount of liability). Moreover, the percentage of medium enterprises was only 28.4 per cent, whereas the percentage of medium enterprises in total according to GSO's data was 36.5 per cent. Besides, it should be noted that the survey data included informal households, which were ignored in GSO's total enterprise survey. The present study also makes clear comparison between the General Statistic Office's total enterprises data and SMEs survey (See Table 1).

Table 1. GSO' total enterprise survey and SMEs survey

Labor size	**GSO' total enterprise survey (Number of acting SMEs enterprises as of 31 December 2010)**		**SMEs survey (Total number of full-time workers in firm 2010 end-year)**	
	Number	%	Number	%
1–10	178,472	62.3%	1,413	71.2%
11–200	105,434	36.8%	563	28.4%
>201	2,562	0.9%	8	0.4%
Total	2,864,688	100%	1,984	100%

Source: Authors summarized from Vietnamese General Statistic Office, 2011 SMEs survey.

In order to eliminate unsuitable firms in the sample, we dropped the firms already stopped their business for one year; firms controlled by the State, such as state owned firms and local state enterprises; joint venture firms with foreign capital; firms primarily using special official bank loans such as loans from the Social Policy Bank, Development Assistant Fund, and the Targeted Program. As explained in the introduction section, we also excluded firms that considered family as the most important credit channel and firms that had percentage of investment financed from relatives and friends more than 50 per cent in total investment. After eliminating these firms, the usable sample size was 1,752 firms.

The second data set used in this study is the Provincial Competitiveness Index (PCI) developed by Vietnamese Chamber of Commerce and Industry (VCCI) and the U.S. Agency for International Development-supported Vietnam Competitiveness Initiative (USAID/VNCI) in 2010. This data was collected for 7,300 non-state enterprises in 63 provinces with the objective of measuring and assessing the standards of economic governance in Vietnam's 63 provinces including entry costs, access to land, transparency and access to information, time costs of regulatory compliance, informal charges, and proactivity of provincial leadership, business support services, labor training, and legal institutions. The final index is counted out of 100 with 5 ranks: very good, good, fair, low and very low.

The major reason for using this data set stems from the assumptions that good business environment, such as more positive government intervention, more transparent information, less informal cost, etc. would help SMEs reduce their reliance on informal credit. The PCI of 10 provinces in the SMEs survey is introduced in Table 2.

Table 2. The PCI of 10 provinces in SMEs survey

Province	Provincial Competitiveness Index (PCI)	Sample size (Percentage)
Ha Noi	55.7	512 (25.6%)
Ho Chi Minh	59.7	492 (24.8%)
Hai Phong	54.6	168 (8.5%)
Ha Tay	55.7	512 (25.8%)
Long An	62.7	90 (4.5%)
Phu Tho	52.5	183 (9.2%)
Quang Nam	59.3	111 (5.6%)
Nghe An	52.4	268 (13.5%)
Khanh Hoa	56.8	90 (4.5%)
Lam Dong	58.3	70 (3.5%)

Source: Authors summarized from 2011 SMEs survey.

In order to analyze firm's access to informal credit market, we focus on items related to firm's characteristics, owner's characteristics, investments, assets, liabilities, credit, networks and formal credit constraint. Some items such as revenue, total asset, invest amount were taken in logarithm and proportional rate with prior year for further analysis. Furthermore, several variables such as formal credit constraint have been created in this study.

4. Background of Vietnamese Informal Credit Market

In Vietnam, informal credit, a crucial financing source, comes from three main sources: family, private money lenders, and trade creditors. Borrowing from family is the first choice of SMEs due to the low interest rates charged and the flexibility of repayment. Private money lenders often charge higher interest, thus this source is considered as the last resort for SMEs seeking informal financing.

Since only a few studies on informal credit sources have been done, it is difficult to find detailed statistics about various aspects of the informal credit market. There is very limited research conducted on SMEs' access to informal sources. Therefore, in this section, a general description of the informal credit market derived from Vietnamese SMEs survey in 2011 is presented.

Table 3 presents information comparing informal credit market with formal credit market. We found that 66 per cent of firms accessed informal credit, while only 30 per cent of SMEs applied for formal credit. Informal credit offers better conditions in lending such as low interest rate, with little or no collateral requirement. However, this does not mean that informal credit is considered to be the most important financing source. The percentage of SMEs that consider formal as the most important financing source is double that of SMEs which consider informal credit to be the most important. Moreover, as reported in Table 3, the most important borrowing amount from informal credit, on average, is much lower than that borrowed from the formal credit channel. Therefore, the statistics lead us to conclude that favorable interest, easier formalities, little or no collateral requirement, and flexible payback conditions are merits of informal credit while limited lending amount is informal credit's major drawback in the case of Vietnam. In addition, in terms of requiring a guarantee, formal credit requires less than informal. This indicates that the informal credit system in Vietnam is based on "reputation and relationship" as is the Chinese informal credit system.

Table 3. Informal credit in comparison with formal credit

Items	Formal credit	Informal credit
Access	30%	66%
Face difficulty in access	26%	2.6%
Require collateral	86%	15%
Require guarantee	7%	41%
Consider as the most important credit	27%	13%
Average of interest per month	1.64%	0.92%
Average of most important borrowing amount (1000 VND)	1.667.074	450.668

Source: Authors summarized from 2011 SMEs survey.

Looking at details of the most important informal loan (in value terms) described in Table 4, we asserted that family plays the most important role in financing SMEs. This source offers loans with the lowest interest and almost no required collateral. In terms of lending amount, private money lender offers the largest lending amount but with the highest interest rate as well.

Table 4. The most important informal loan (in value terms)

Informal Credit source	Considered as the most important informal loan (observation number)	Average amount borrowed (1000VND)	Interest per month (%)	Require collateral (%)
Private money lender	124	544,316	1.84	47.6
Family	282	363,396	0.56	3.2
Other enterprises	18	328,611	1.42	33.3
Other	19	221,526	0.8	15.7

Source: Authors calculated from the 2011 SMEs survey.

Hence, it seems natural for SMEs to take advantage of family borrowing as an internal financing source, and to place their first priority on this source when lacking credit. When this source cannot meet their credit demands, they try to access banks, or private money lenders.

With regards to the ratio of informal debt in total liabilities, as well as in total investment described in Figure 1, we can see that the share of informal credit in total investment, total short term debt, and long term debt are all very low in comparison with formal credit. This can be explained by the fact that informal credit channels are used to satisfy SMEs' immediate credit demands more than long term credit demands. Moreover, the fact that tax deduction is not allowed when SMEs borrow on the informal market may also be reflected in the small share of the informal market in both short term and long term debt (Note 2).

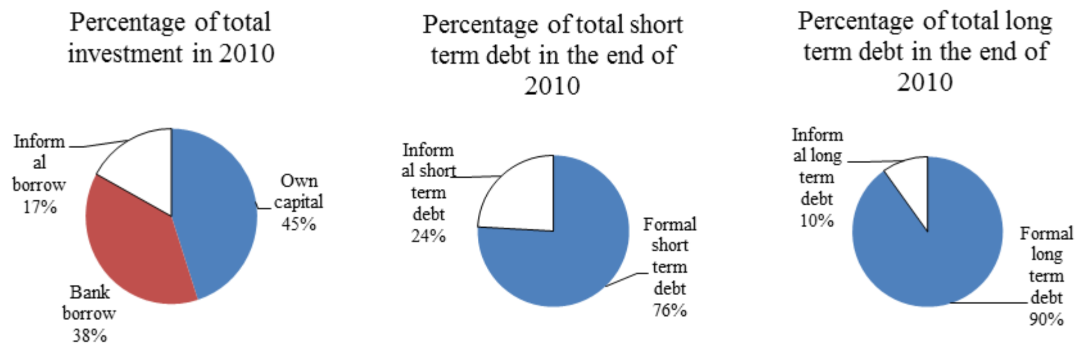

Figure 1. Percentage of informal credit in total investment, total short term debt, long term debt

Source: Authors calculated from 2011 SMEs survey

5. The Empirical Model and Interpretation of Results

5.1 The Empirical Model

In this paper, we investigate the probability of SMEs access to the informal credit market by employing logistic regression model. We create a dependent variable based on the direct response of firms to the question: "Have you borrowed from informal sources since 2009?" This is treated as a dummy variable, and takes the value of zero if firm did not borrow, and takes the value of one if they did.

In order to answer two research questions: (1) Which factors determine SMEs access to informal credit? (2) Have the efforts of government in improving business environment for the private sector reduced the reliance of SMEs access to informal credit or not?, we test the three following hypotheses:

H1: Firms that cannot be satisfied through formal credit choose to access informal credit.

H2: Firms access informal credit, in part, to reduce application cost and to provide immediate access to credit in order to seize investment opportunities.

H3: Good business environment can help SMEs decrease their reliance on informal credit.

In terms of selecting explanatory variables to test the first hypothesis, we take factors related to formal credit constraints into consideration. In particular, we use two variables, one that represents firms that used to be denied when applying for formal credit, and the other, firms that still feel in need of credit after obtaining formal loans. In order to test the second hypothesis, we use two variables, one represents firms that have demand for credit but did not apply for formal credit, and one for firms that no longer need formal credit after obtaining loan. Investment and firm performance such as profitability, sales growth, and employment growth rates were added to investigate their impact on access to informal credit. Regional business environment variable is an additional factor to test whether the government's efforts have improved the business environment for the private sector, which consequently reduces the reliance of SMEs on informal credit. Furthermore, we add some proxies for firms' credit worthiness such as collateral, firm scale, firm age, owner characteristics, with the expectation that the probability of borrowing from informal credit will increase with firm's low credit worthiness. Because these independent variables seem to have a close correlation with each other, we check pair correlations. However, as a result of the pair correlations of variables used in the model, we found that there is no significant strong correlation between them (Note 3).

Hence, the following model is tested:

$$\ln\left\{\frac{P(y_i=1)}{1-P(y_i=1)}\right\} = \beta_0 + \beta_1 creditconstraint_i + \beta_2 d\_invest_i + \beta_3 d\_landpossession_i + \beta_4 financial\ statement_i + \beta_5 business\ environment_i + \beta_6 firm\ characteristics_i + \beta_7 owner\ characteristics_i$$

In which, dependent variable y_i replaces access to informal credit of firm i. It's treated as a dummy variable. It takes the value of zero if a firm did not borrow any informal credit, it takes a value of one if they did.

Independent variables contain:

- Credit constraints: a set of variables representing the factors of being formal credit constrained. This involves:

✓ Firms that used to be denied when applying for formal credit,

✓ Firms that were still in need of credit after obtaining a formal loan,

✓ Firms that have credit demands but did not apply for formal credit,

✓ Firms that no longer need formal credit after obtaining a loan

- d_invest: a dummy variable representing whether firms are conducting any investment activities.
- d_landpossession: a dummy variable representing whether the owner has certified land possession.

- Financial statement: a set of variables containing firm's profitability (ROA), total assets, outstanding debt rate, sales growth, and employment growth rate.
- Business environment is a set of two variables: regional business environment and firm's location.
- Firm's characteristics: a set of variables containing firm age and firm size.
- Owner's characteristics: a set of variables containing age, education level and managerial experience of firm's owners.

Table 5 presents the variables definition, expected sign, and basic summary statistics.

Table 5. Variables definition, expected sign and statistical description

Variables		Definition	Expected sign	Obs	Mean	Std. Dev.	Min	Max
Dependent variable								
Borrowing from informal credit	d_borrow_informal	Firms that borrow from informal credit		1752	0.611	0.488	0	1
Explanatory variables								
Formal credit constraint	d_FLdenied	Firms that used to be denied when applying for formal credit	+	1752	0.785	0.411	0	1
	d_stillneed	Firms that were still in need of credit after obtaining formal credit	+	1752	0.126	0.331	0	1
	d_cons1	Firms that had credit demand but did not apply for formal credit	+	1752	0.162	0.368	0	1
	d_Flsatisfied	Firms that no longer need credit after obtaining formal credit	+/-	1752	0.123	0.328	0	1
Investment	d_invest	Firms that conducted investment activities	+	1752	0.490	0.500	0	1
Land possession	d_landpossession	Firm's owner had a certificate of land using right	+/-	1752	0.670	0.470	0	1
Financial statement	ROA2009	Total gross profit/ total asset in 2009	-	1752	0.288	0.617	-0.05	12.82
	log_asset2009	Total assets in 2009 in logarithm	+/-	1752	14.168	1.756	8.896	19.93
	debtratio2009	Outstanding debt/ total assets in 2009	+	1752	0.056	0.174	0	4.075
	sales growth	Revenue from sales in 2010/ 2009	+	1752	1.145	0.371	0.108	10.32
	growth rate	Total full employee in 2010/ 2009	+	1749	1.009	0.256	0	6
Business environment	region PCI	2010 regional provincial competitiveness index	-	1752	56.610	3.060	52.4	62.7
	d_rural	Firms located in rural area	+	1752	0.551	0.497	0	1
Control variables								
Firm characteristics	firm age	2010 - started firm year 1: under 3 years, 2: from 3 years to under 5 years	-	1752	3.343	0.889	1	4

		3: from 5 years to under 10 years 4: over 10 years						
	firm size	Total number of full-time workers in 2010 end-year 1: 1 - 10 workers 2: 11 - 200 workers 3: >= 201 workers	-	1752	1.287	0.461	1	3
Owner characteristics	owner_age	Age of owner: 2010 – the year of birth	-	1752	44.914	10.791	16	91
	owner_education	Highest education of owner/ manager 0: Unskilled/ elementary worker/ technical worker without certificate 1: Professional secondary/ technical worker with certificate 2: College/ University/ Post-graduate	+/-	1752	0.679	0.847	0	2
	d_managerial experience	Owner has managerial experience 0: The owner did not have managerial experience before establishing enterprise 1: Before the present enterprise, owner owned other enterprise/ currently have more than 1 enterprise	+/-	1752	0.019	0.138	0	1

5.2 Estimation Results and Interpretation

In this section, we analyze the factors that have impact on SMEs' probability of access into informal credit market. Table 6 presents the logistic regression model results.

In line with our expectations, we found positive and statistically significant associations between access to informal and all forms of formal credit constraints. These strongly positive relations highlight that firms under formal credit constraint are likely to satisfy their credit demand in informal credit market. Moreover, we observed that firms, even firms that have already obtained sufficient credit from formal credit, may still borrow from informal credit channel. Surprisingly, the marginal effect of formal credit satisfaction variable is higher than the other variables representing credit constraint. Perhaps this is because they accessed informal credit in order to seize investment opportunities, as we hypothesized. The high significance of investment variable proves the importance of informal credit in firm's innovation.

Table 6. Results of the logistic regression model

Logit Model: Access to informal credit market					
Dependent Variable: d_borrow_informal		*Coefficients.*	*Robust SE*	*Odds ratio*	*Marginal effects*
Explanatory variables					
Formal credit constraint	d_FLdenied	0.997**	[0.434]	2.709	0.207
	d_stillneed_formal	1.252***	[0.437]	3.496	0.260
	d_cons1	0.878***	[0.156]	2.407	0.183
	d_FLsatisfied	1.342***	[0.452]	3.825	0.279
Investment	d_invest	0.331***	[0.123]	1.393	0.069
Land possession	d_landpossession	-0.036	[0.125]	0.965	-0.007
Financial statement	ROA2009	-0.207**	[0.085]	0.813	-0.043
	log_asset2009	0.064	[0.044]	1.066	0.013
	debtratio2009	1.632***	[0.621]	5.113	0.339
	sales growth	-0.177	[0.165]	0.838	-0.037
	growth rate	-0.37	[0.241]	0.691	-0.077
Business environment	region PCI	-0.052***	[0.019]	0.949	-0.011
	d_rural	0.433***	[0.130]	1.542	0.090
Control variables					
Firm characteristics	2.firm age	0.07	[0.271]	1.073	0.014
	3.firm age	0.076	[0.233]	1.079	0.015
	4.firm age	-0.185	[0.227]	0.831	-0.039
	2.firm size	0.828***	[0.165]	2.289	0.169
	3.firm size	-0.066	[0.664]	0.936	-0.015
Owner characteristics	owner_age	-0.012**	[0.005]	0.988	-0.003
	1.owner_education	-0.228	[0.144]	0.796	-0.047
	2.owner_education	-0.214	[0.159]	0.807	-0.044
	d_managerial experience	0.426	[0.447]	1.532	0.089
Constant		2.022	[1.328]		
No. of Obs.		1749			
Log pseudolikelihood		-1050.946			
Pseudo R2		0.1			

Notes: */**/*** indicates statistical significance at 10%, 5% and 1% level.

Regarding the impact of firm performance on informal credit, we found that profitability reduces the probability of access, while a high debt ratio induces firm to borrow more. This conclusion supports the pecking order theory; which emphasized that firms prefer using retained profits to cover their credit demands over using external financial sources. On the other hand, we found that there is no significant association between firm's growth rate with probability of access to informal credit, in both revenue and employment.

With respect to the impacts of regional business environment, as we expected, the significant and negative correlation between PCI and access to the informal credit market was observed in this study. In other words, the greater the provincial governments put effort into improving the conditions of the business environment, the less SMEs' reliance on informal credit will be. However, the probability increases with firm's location in rural areas. This result suggests that formal financing source in rural area is still limited so that SMEs have to borrow from informal channels to satisfy their financial needs.

In terms of a firm's characteristics, the coefficient of firm size shows the positive effect at a 1% statistically significant level. This may be because that larger firms can access formal credit more easily while smaller firms have to mainly use informal credit. With regard to the influence from owner's characteristics, the negative and statistically significant coefficient estimates of owner age shows that the older owner becomes, the less informal credit they use. This can be explained in that older owners can take advantage of more experience, and may have a positive net worth more than younger owners. This suggests that they may also have a more stable business environment and no longer need to borrow from the informal market.

In comparison with the results of previous studies, several interesting findings have been drawn. In terms of the close association between access to informal credit and formal credit constraint, we reach the same conclusion as Rand (2007), Safavian and Wimpey (2007). But surprisingly, the number of firms that applied for informal credit after receiving sufficient formal credit was remarkably high. The explanation for this is consistent with Rand (2007). However, unlike Rand (2007), we found no significant relationship between fast growing firms with probability of access. Regarding the importance of business environment, although mentioned in Safavian and Wimpey's paper (2007), by using the index of provincial competitiveness, we can convincingly prove that improving business environment by regional governments reduces SMEs' dependence on informal credit channel.

6. Conclusion and Remarks

Informal credit market plays an essential role in financing for Vietnamese SMEs. It provides credit not only for firms that are rationed out of the formal credit market, but also for firms that have access to formal credit as well. In the present paper, we examine the determinants of SMEs' access to informal credit with a focus on borrowing from private money lenders. We address this issue from the 2011 SMEs survey and the 2010 PCI data sets. The large sample size, as well as the up to date information from these data sets enables us to explore new evidence by employing logistic regression model.

With the interpretation of the results, we can conclude that SMEs that were not satisfied in the formal credit market are likely to access to the informal credit market to satisfy their credit demands. However, even some firms that could access formal credit, and firms that had credit demands but without formal credit application, and those conducting investment activities, all applied for informal credit to reduce application costs and seize investment opportunities. The positive impact of good business environment on reducing firm's reliance on informal credit was proved. Furthermore, we found that small firms, and firms located in rural areas were more likely to use informal credit than others. Moreover, a higher age of owner helps firms to decrease their reliance on informal credit. Interestingly, we did not find any significant link between firm performance and the probability of access to informal credit; which can perhaps be explained by the fact that SMEs may use retained profits to cover their operating expenses.

The empirical results obtained from this study shed new light on relevant policies. First, the proportion of firms with access to informal credit was much higher than the percentage of firm with access to formal credit which implies that SMEs are still facing many obstacles to satisfy their credit needs in formal credit. This issue suggests policy makers should put greater efforts into supporting SMEs. This could be done by simplifying the lending procedure, decreasing the interest rate, etc. In this paper, the role of regional business environment is proved, which reveals the importance of improving business environment to reduce the reliance on informal credit. In order to help SMEs reduce their reliance on informal credit, policy makers should focus not only on widening the credit supply of financial institutions, but also on improving SMEs' business environment. Second, high dependence on informal credit of firms located in rural areas highlights that there should be more support programs to assist these firms in financing their credit in future. Third, high probability of access to informal credit of firms that conduct investment activities reveals that more consideration needs to be made in order to help SMEs find more appropriate finance resources for their investment projects in a timely manner. This is really important if we are to enhance the technology levels of Vietnamese SMEs.

However, this study has some limitations since only determinants of SMEs' access to the informal credit channel were investigated. Lacking useful information about the amount firm obtained from informal channels restricted further analysis. We would like to know whether firms are still under credit constraint after access to both formal and informal credit. The impact of access to informal credit on firm's performance and growth also needs further study. To understand these relationships, a longer data collection period and more detailed data should be employed in future research.

Acknowledgement

The author is grateful to Professor Toshiki Jinushi, Professor Kenya Fujiwara, Professor Yoichi Matsubayashi of The Graduate School of Economics, Kobe University for the valuable comments and suggestions. Responsibility for contents and errors rests with the author.

References

Altunbas, Y., & Bazzana, F. (2014). Why Do SMEs Use Informal Credit? A Comparison between Countries. *Journal of Financial Management, Markets and Institutions*.

Barslund, & Tarp. (2008). Formal and Informal Credit in Four Provinces of Vietnam. *Journal* *of Development Studies, 44*(4), 485-503, http://dx.doi.org/10.1080/00220380801980798

Beck, T. (2007). *Financing constraints of SMEs in developing countries: Evidence, determinants and solutions*. The World Bank. Washington DC. Retrieved from http://siteresources.worldbank.org/DEC/Resources/Financing_Constraints_of_SMEs.pdf

Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance, 30*(11), 2931-2943. http://dx.doi.org/10.1016/j.jbankfin.2006.05.009

Bigsten, A., Collier, P., Dercon, S., Fafchamps, M., Gauthier, B., Gunning, J. W., & Zeufack, A. (2003). Credit constraints in manufacturing enterprises in Africa. *Journal of African Economies, 12*(1), 104-125. http://dx.doi.org/10.1093/jae/12.1.104

Cong, J. (2009). Chinese informal financial systems and economic growth: A case study of China’s small and medium enterprises. Policy Research Institute, Ministry of Finance, Japan. *Public Policy Review, 5*(1), 63-88. Retrieved from http://www.mof.go.jp/english/pri/publication/pp_review/ppr005/ppr005d.pdf

Donaldson, G. (1961). *Corporate debt capacity: A study of corporate debt policy and the determination of corporate debt capacity*. Boston: Division of Research, Harvard School of Business Administration.

Gertler, M. (1988). *Financial structure and aggregate economic activity: an overview*. National Bureau of Economic Research Cambridge, Mass., USA

Le. (2012). What determines the access to credit by SMEs? A case study in Viet Nam. *Journal of Management Research*. http://dx.doi.org/10.5296/jmr.v4i4.1838

Madestam, A. (2014). Informal finance: A theory of moneylenders. *Journal of Development Economics, 107*(C), 157-174.

Myers, S. C. (1984). *Capital structure puzzle*. National Bureau of Economic Research Cambridge, Mass., USA

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187–221. http://dx.doi.org/10.1016/0304-405X(84)90023-0

Nguyen, N., & Luu, N. T. H. (2013). Determinants of financing pattern and access to formal-informal credit: The case of small and medium sized enterprises in Viet Nam. *Journal of Management Research, 5*(2), 240-259. http://dx.doi.org/10.5296/jmr.v5i2.3266

Parkshit, G. (2000). *Credit rationing in developing countries, an overview of the theory*. A reader in Development Economics. Retrieved from https://www.nyu.edu/econ/user/debraj/Papers/Gmr.pdf

Rand, J., Tarp, F., Tran, C., & Nguyen, T. (2009). SME access to credit. *Vietnam Economic Management Review, 3*(1), 49-55.

Rand, J. (2007). Credit constraints and determinants of the cost of capital in Vietnamese manufacturing. *Small Business Economics, 29*(1), 1-13. http://dx.doi.org/10.1007/s11187-005-1161-2

Safavian, M., & Wimpey, J. (2007). *When do enterprises prefer informal credit?* Policy Research Working Paper, The World Bank. Retrieved from http://www.researchgate.net/profile/Flavio_Bazzana/publication/256011556_Determinants_of_Informal_Credit_Use_A_Cross_Country_Study/links/00463521e055d801ec000000

Tang, S. Y. (1995). Informal Credit Markets and Economic Development in Taiwan. *World Development, 23*(5), 845-855. http://dx.doi.org/10.1016/0305-750X(95)00014-4

Thanh, V., Cuong, T. T., Dung, B., & Chieu, T. D. U. C. (2011). Small and medium enterprises access to finance in Viet Nam. Jakarta: Economic Research Institute for ASEAN and East Asia (ERIA). Retrieved from http://www.eria.org/publications/research_project_reports/images/pdf/y2010/no14/All_Files.pdf

Notes

Note 1. For example, in 2001, the prime minister decided to establish an SME credit guarantee fund (193/2001/QD-TTg decision). Financial institutions have gradually removed barriers to lending for SMEs, such as no or reduced collateral, guaranteed collateral regulations (12/2003/QD-TTg decision). In addition, many financial support programs have been offered by international organizations. Some notable projects are the ADB's Agricultural enterprises financing project, the World Bank's Agriculture and Rural financing program, a Japanese ODA financial support program run by JBIC and the partner Viettin Bank.

Note 2. Informal loan with interest over 150% basic interest announced by the State bank is not considered as a tax deduction factor for enterprises in Vietnam.

Note 3. The result of the pair correlations of variables used in the model is available upon request.

Copyright Disclaimer

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/3.0/).