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Факторы, оказывающие воздействие на кредитование малых и средних предприятий во Вьетнаме

Трудность в доступе к кредитам является одним из основных препятствий на пути развития малых и средних предприятий (МСП) во Вьетнаме. Низкая доступность капитала вынуждает МСП тратить как официальные, так и неофициальные расходы на получение кредитов и/или на доступ к неофициальному рынку с более высокими процентными ставками, тем самым увеличивая стоимость производства предприятий. Исследования показывают, что детерминанты обработки банковских кредитов, через которые малые и средние предприятия могут получить доступ к официальным кредитам, включают: характеристики предприятий; показатели, отражающие показатели деятельности предприятий; характеристики кредитов; характеристики предприятий, владельцев предприятий; географическое положение предприятий; кредитоспособность предприятий и роль сети.

Цель исследования. *Целью настоящей работы является количественный анализ факторов, оказывающие воздействие на кредитование малых и средних предприятий во Вьетнаме.*

Материалы и методы. *Данное исследование проведено на основе опроса, проведенного в декабре 2017 года. В опросах приняли участие 301 предприятие в городе Ханой. Выбранные предприятия также являются предприятиями, которые были включены в ежегодное исследование предприятий Генеральным статистическим управлением Вьетнама. В этой статье используется подход регрессии Probit и Logit для оценки влияния факторов, влияющих на вероятность выплаты кредита предприятию. На долю МСП приходится 56,69% образцов. Количество предприятий, обращающихся за банковским кредитом, составляет 58,4% от общего объема выборок, из которых доля выданных кредитов для МСП составляет всего 47,3%. Для предприятий без банковского кредита, устраняя причины отсутствия спроса и не желая быть в долгу, основными причинами не получения банковских кредитов являются высокие процентные ставки, сложные процедуры кредитования и недостаточное обеспечение.*

Результат. *Результаты, полученные в модели Logistic и Probit, показывают, что оценочные коэффициенты являются статистически значимыми, что влияет на вероятность принятия бизнес-кредита, принятого финансовыми учреждениями. Хотя коэффициенты, оцененные по модели логистики, больше, чем оцененные по модели Пробита, оценочные результаты показывают, что направление воздействия переменных в двух методах оценки дает весьма схожие результаты.*

Заключение. *Исходя из результатов этого исследования, правительство Вьетнама должно осуществлять политику поддержки МСП в улучшении доступа к капиталу. Кредитные учреждения должны разрабатывать продукты и услуги, соответствующие характеристикам МСП во Вьетнаме.*

Ключевые слова: *малые и средние предприятия, кредит, банк, Вьетнам*

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The factors affecting accessibility to credit capital of small and medium enterprises in Vietnam*

The difficulty in accessing loans is one of the major barriers to the development of small and medium enterprises (SMEs) in Vietnam. Low accessibility to capital forces SMEs to spend both official and unofficial costs in order to obtain loans, and/or to access the unofficial market at higher interest rates, thereby increasing cost of production of enterprises. Studies suggest that the determinants of bank loan processing through which small and medium enterprises can access official loans include: characteristics of enterprises; indicators, reflecting the performance of enterprises; characteristics of loans; characteristics of enterprises, enterprise owners; geographical position of enterprises; the creditworthiness of enterprises and the role of the network.

Purpose of the study. *The aim of this paper is the quantitative analysis of the factors, affecting accessibility to credit capital of small and medium enterprises in Vietnam.*

Materials and methods. *This study was conducted on the basis of a survey in December 2017. The survey includes 301 enterprises in Hanoi city. Selected enterprises are also enterprises, surveyed in the annual enterprise survey by the General Statistics Office of Vietnam. This paper uses the Probit and Logit regression approach to estimate the impact of factors, affecting the disbursement probability of a loan of an enterprise. The number of SMEs accounts for 56.69% of the samples. The number of enterprises, applying for a bank loan accounts for 58.4% of the total samples, of which the percentage of disbursed loans for SMEs accounts for only 47.3%. For enterprises without a bank loan, eliminating the reasons for the lack of demand and unwish to be in debt, the main reasons not to access bank loans are high interest rates, complicated loan procedures and insufficient collateral.*

Results. *The results obtained from the Logistic and Probit models show that the estimated coefficients are statistically significant, affecting the probability of taking a business loan, accepted by financial institutions. Although the coefficients, estimated from Logistics model are larger than those estimated from the Probit model, the estimated results show that the direction of impact of the variables in two estimation techniques gives quite similar results.*

Conclusion. *Based on the results of this study, the Government of Vietnam should implement policies to support SMEs in the direction of improving their access to capital. The credit institutions should design products and services suitable to the characteristics of SMEs in Vietnam.*

Keywords: *small and medium enterprises, SMEs, credit, bank, Vietnam*

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1. Introduction

Characteristics of the owners including age, educational background, professional experience, management skills are believed to affect the credit accessibility of enterprises. Educational background gives enterprise owners a better position to understand the requirements for running an enterprise and helps them manage different aspects of the enterprises (Kasseeah & Thoplan, 2012). Educational background is associated with experience, so managers usually prepare better borrowing profiles at the request of lenders (Cole et al., 2004).

Bates (1990) surveyed 4400 small enterprises and said that owners attending four or five college/university years could access bank capital more easily but there is no evidence that high educational background improves the [illegible] bank [illegible]. However, [illegible] background [illegible] an [illegible] role in [illegible]ing [illegible] lending. The higher educational background of a enterprise owner, the less likely it is to borrow from an official source, which explains that an enterprise owner [illegible] enterprise [illegible] be[illegible] applying [illegible] a lo[illegible] they [illegible]ide not to [illegible]ose a[illegible] [illegible]pital ([illegible] and et al, 2007). Another explanation is that the educational background reflects the level of management, highly educated enterprise owners often have well-managed and well-run enterprises, so profits will be high and they use the majority of retained profits instead of external borrowing.

Women with less financial knowledge are more engaged in unofficial financial transactions than men (Baydas et al., 1995). To incorporate and run a business in an environment dominated by men, business women generally have higher educational background, and they are more talented than other enterprise owners, whereby women are more likely to have accessibility to official credit (Yaldiz et al., 2011).

According to Yaldiz et al (2011), the correlation between the owner's age and work experience can help reduce the financial constraints of the company. The older the leaders are, the more risk and the less energy in working they get. Therefore, they prefer official loans or their own assets to unofficial loans (Nakano et al., 2011).

The size of enterprises is one of the major reasons for the different capital choices of enterprises (Beck, 2007; Beck et al., 2006; Gertler & Gilchrist, 1994; Devereux & Schiantarelli, 1990). If the size of the enterprise is too small, banks and financial institutions will be reluctant to lend because of asymmetric information issues that significantly increase transaction costs, such as the expense of investigations to review loans, inspect and supervise enterprises. Small enterprises are mo[illegible] lik[illegible] to [illegible]ance [illegible] prop[illegible] [illegible]ment[illegible] by [illegible] official [illegible] or families and friends or heavily dependent on short-term loans from banks. Meanwhile, bigger enterprises can finance their investments through official capi[illegible] sources s[illegible] owner's [illegible] bank l[illegible] etc. [illegible]ernanke [illegible] a[illegible] 200[illegible] conclus[illegible]s are consistent with the theoretical models of using fixed transaction costs, asymmetric information, and the consequence of issues related to representative. Large-scale enterprises do not only encounter less credit constraints but also can access to various sources of capital. Meanwhile, small-scale enterprises have relatively high credit risk, which likely to make banks lend money less (Black, 2012). The small-scale enterprises, therefore, may be more dependent on unofficial capital resources.

The research by Hernandez & Martinez (2008) on the capital sources of SMEs in European financial systems has shown that, as the size of an enterprise is larger, the accessibility to capital is significantly improved and the cost of borrowing also decreases, the main reason is the decline of imperfect information issues. The age of an enterprise is also a factor affecting the accessibility to capital in many studies. This variable is considered as a measure of reliability, a young enterprise is considered to be inexperienced in business operations, higher failure risks, while banks/enterprises operating for years will have more information about business operations, so it is easier to manage.

Asymmetric information issues may be particularly significant for young enterprises and start-ups as creditors do not have enough time to supervise such enterprises. In addition, start-ups do not have the time to build long-term relationships with financial providers, so they often seek for unofficial financing. Meanwhile, long-term enterprises have the advantage in [illegible]rrow[illegible] fr[illegible] banks (Ger[illegible]er, [illegible] [illegible]oter[illegible] a[illegible] 2006; O[illegible]ner [illegible] Ruc[illegible]us[illegible] Beck [illegible] al., 2006). Accordingly, the age range of enterprises has the opposite effect to borrow money from unofficial sources at a high level; the longer the enterprises operate, [illegible] less [illegible] rely o[illegible] [illegible]pital [illegible]elativ[illegible]ds [illegible]orr[illegible]ings f[illegible] the[illegible]ers.

Regarding form of ownership, researches generally indicate that government-owned enterprises with less financial barriers than other enterprises, can easily access to official sources of capital as they often receive direct government funding and preferential treatment from government financial institutions (Harrison et al., 2004; Laeven, 2003). In particular, state-owned enterprises have easy access to capital from banks for development and banks owned by the state (Beck et al., 2008), while private enterprises often face credit limits (Drakos & Giannakopoulos, 2011). In addition, state-owned enterprises are less likely to face issues related to collateral and administrative procedures than private ones (Beck et al, 2005).

Beck (2007) noted a significant difference in financial barriers between enterprises across countries after controlling the difference in GDP per capita. This indicates geographic location or, more specifically, the location of enterprises involves in the credit restriction, so it is a factor explaining the enterprises' accessibility to capital. Enterprises in small cities rely more on unofficial credit than enterprises in large cities do (Yaldiz et al, 2011). The transaction costs for credit appraisal of the enterprises in rural or remote areas are relatively high, so banks are less willing to lend to enterprises in these regions (Gine, 2011). On the other hand, the enterprises in urban areas or near commercial banks can access to bank loans more easily as it facilitates the banks to supervise and collect "soft" information, thereby allowing the banks to make a decision on the loan request (Petersen & Rajan, 1995).

The creditworthiness of enterprises is expressed in two aspects: the availability of collateral and the transparency of financial information from the enterprises. Empirical studies suggest that collaterals help increase the accessibility to capital of enterprises at credit institutions. The lack of collaterals is a major barrier to the accessibility to capital of enterprises to official capital (Shinozaki, 2012); Fatoki & Odeyemi, 2010); Kira & He, 2012; Fatoki & Asah, 2011). The inequity in credit sources accessibility is generated by mortgage regulations in Vietnam. Accordingly, a land use permit is a common mortgage rather than a business potential because the institutional environment is insecure and insufficient to protect borrowers and debtors, as well as the lack of capacity to assess and manage the liquidity of other mortgage accounts such as machinery and equipment. Due to the underdeveloped land market, very few private enterprises are able to obtain additional land through official land use documents, making them more vulnerable to access to loans. Meanwhile, the majority of state-owned enterprises own larger and valuable lots of land, thereby increasing their ability to obtain official capital (Malesky & Taussig, 2005).

The role of the network is an important factor in the financing policy of SMEs, especially in developing countries, where the financial system is underdeveloped. Business networks can be used to reduce asymmetries information issue between creditors and borrowers (Shane & Cable, 2002). In general, networks and relationships replace the lack of effective market mechanisms and can be an effective way for enterprises to access to external credit, including bank loans. Networks and relationships have a positive impact on enterprises' credit accessibility. In addition, networks are important for enterprises that rely heavily on unofficial credit. Lenders rely primarily on "soft" information collected by working with enterprises for a long time, observing profitability, performance and repayments in the past to assess the creditworthiness of businesses and credit appraisal. Enterprises that have borrowed from previous creditors and have built some business relationships have significantly lower capital costs (Safavian & Wimpey, 2007; Straub, 2005; Rand, 2007). In addition, network is a prerequisite helping enterprises lift financial barriers because regular relationships with lenders make it easier for enterprises to access to credit, even when other conditions are limited (Bougheas et al., 2006).

Regarding the characteristics of educational background, some other studies in Vietnam give the opposite findings. Specifically, the accessibility to capital for owners graduating from colleges or universities is 12.8% lower than that of managers with lower educational background (Nhung et al., 2015). However, the study by Thanh et al (2011) found that the educational background of enterprise owners does not affect their accessibility to capital. The majority of enterprise owners, even those with degrees of bachelor and above, are also less well-educated in business, corporate governance and business law. This has a great impact on corporate governance and therefore has a significant impact on SMEs' accessibility to official capital (Manh Trung, 2014).

In terms of gender, a large number of other studies in Vietnam have found that the accessibility to capital of female enterprise owners is higher than that of male managers as in the business world; women are more talented and better educated than men (Yaldiz et al., 2011; Thanh et al., 2011).

The study by Nguyet (2014) shows that the opposite relationship between the age and the percentage of unofficial capital sector in which the leader enterprise owner with experience are less likely to rely on loans in general and unofficial capital in particular. In addition, the age of the enterprise owners also represents the number of years of experience, so many young enterprises will find difficulties to borrow capital from banks. In addition, a large amount of enterprise assets and land use rights of enterprise owners will help increase their accessibility to capital by 5% and 1%, a large amount of assets will not help enterprises obtain the capital they want. Because the greater the amount of enterprise assets, the higher the capital requirement, the less they are satisfied with the loans.

State-owned enterprises are still considered less risky entities for investments because of the government's public implicit guarantees and the little possibility of bankruptcy, as well as long-term relationships between state commercial banks and State-owned enterprises (Hakkala & Kokko, 2007). The official networks, relationships with government officials or banks are significantly and positively related to

Table 1

Summary of sample information

No	Sample	State-owned enterprises	Non-state enterprises	Total
1	Survey Sample	19	282	301
	SMEs	6	158	164
2	Large enterprises	13	124	137
	Number of enterprises with application for a loan	12	164	176
	SMEs	2	86	88
	Large enterprises	10	78	88
3	Number of enterprises with disbursed application	12	158	170
	SMEs	2	79	81
	Large enterprises	10	79	89
4	With Chief Financial Officer	5	76	81
	SMEs	1	36	37
	Large enterprises	4	40	44
5	Years of operation of enterprises (on average)	24,3	9,9	10,8
	SMEs	20	8,97	9,25
	Large enterprises	25,6	11,23	12,81
6	Number of profitable enterprises in 2016	18	207	225
	SMEs	4	111	115
	Large enterprises	14	96	110
	Number of enterprises with available collateral	10	166	176
			96	
	Large enterprises		70	
	Number of enterprises listed on the stock market		16	
			4	5

the ability to borrow bank loans, yet it does not have the power to influence the [illegible] money [illegible] (Le & Nguyen, 2[illegible] network will enable enterprises to access credit more effectively in the early stages of development than in the future. They argue that through the network, especially with government officials, the credibility of enterprises is increasing in the eyes of donors and government support programs, thereby increasing accessibility to funding and reducing expenses (Le et al, 2006).

In summary, on the basis of reviewing the studies above, the determinants of the processing of bank loans through which enterprises can access official loans include: (1) characteristics of enterprises, such as size, type of ownership, age of enterprises; (2) indicators reflecting the business performance, such as revenue growth, Return on assets (ROA); (3) characteristics of the loans, such as whether the loans require mortgaged assets; and (4) other variables such [illegible] characteristics [illegible] ics, [illegible] location [illegible] of enterprises and the role of the network.

2. Data and research methods

This study was conducted based on a survey in December 2017 (Report 2017). The survey samples include 301 enterprises in Hanoi. Selected enterprises are also enterprises surveyed in the annual enterprise survey by the General Statistics Office of Vietnam.

The number of SMEs accounts for 56.69% of the samples. The number of enterprises applying for a bank loan accounts for 58.4% of the total samples, of which the percentage of disbursed loans for SMEs accounts for only 47.3% (Table 1). For enterprises without a bank loan, eliminating the reason for no demand and for not wanting to be indebted, the main reasons not to access bank loans are high interest rates, complicated loan procedures and insufficient collateral.

The [illegible] number of years [illegible] enterprises [illegible] rating on the [illegible] up to [illegible] e of the survey is [illegible] 0.8 years. In particular, small and medium enterprises (SMEs) with less than five years of operation accounts for 31.2% and less than 10 years of [illegible] nt for 66.5% [illegible] In theory, the [illegible] the number of years the [illegible] ket, [illegible] easier [illegible] for enterprises to access to capital in the financial and monetary

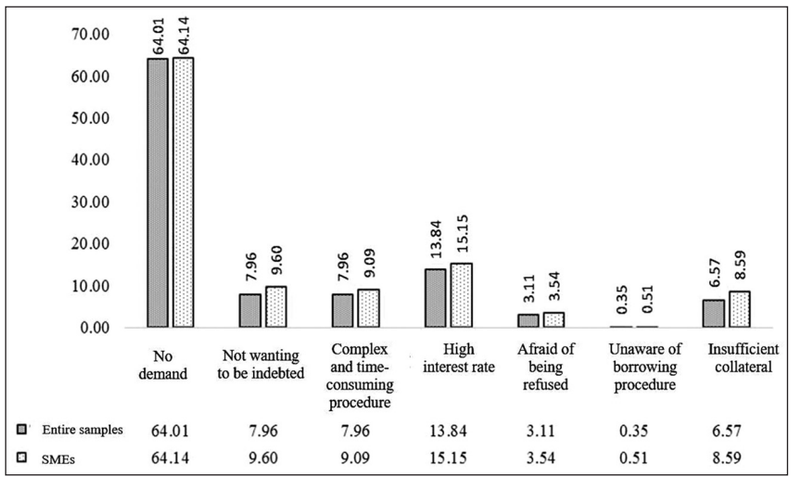


Figure 1. The reasons why enterprises do not borrow commercial banks
(Source: Report 2017)

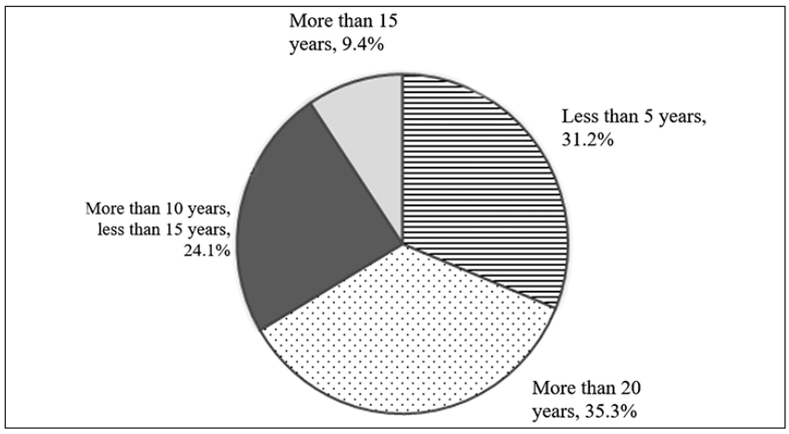


Figure 2. Years of operation of SMEs in the samples
(Source: Report 2017)

markets. However, the reality is that enterprises in Vietnam have relatively young average age, especially SMEs. Therefore, this will also probably be a barrier for private enterprises in general and SMEs in particular when accessing loans from the market.

[illegible] SMEs only 2[illegible]% [illegible]e enterprises have CFO an[illegible] profitable SMEs in 2016 [illegible]cou[illegible] for only 67.51% (Table 1). Thus, the constraints on financial management and capital flow management that SMEs are facing today are also one of the barriers for enterprises to access to loans in the official market.

Based on survey data, a review of the factors affecting the access to cre[illegible] lo[illegible] of enterpr[illegible] the vari[illegible] in[illegible]it a[illegible] L[illegible]s-tic qua[illegible]ta[illegible] an[illegible]is[illegible] de[illegible]ped as follows:

– For the dependent variable (Y): This is a binary variable that measures an enterprise's accessibility to capital from credit institutions. The value of Y=1 when enterprises have a bank loan application and have been accepted to disburse and Y=0 when the bank refuses.

– For independent variables: the variables reflecting the studied enterprises are Small and medium enterprises (SME), State-owned enterprises (STATE), age of enterprises (AGE), enterprises with a chief financial officer (CFO), Return on assets (ROA), availability of collateral (collateral), cost of bribes, gifts related to loans (Corruption), variables reflecting the relationship between enterprises and banks, enterprises listed on the stock market (Stockmarket) and some other exogenous variables. Table 2 below summarizes the definition of the [illegible]riab[illegible] use[illegible] the empi[illegible]cal

Th[illegible] pa[illegible]e Probit and Logit regression approach to esti-

Table 2

The table describing the variables used in the model

[illegible]bo[illegible]		[illegible]ti[illegible]en	
	SM[illegible]	S[illegible]ll and m[illegible]um enterprises	E =1 [illegible]e numbe[illegible] employees is l[illegible]han 20[illegible]ital [illegible]ss th[illegible] VND 0 billi[illegible]the[illegible]e is[illegible] than VND 30[illegible]llion a[illegible]ice versa, [illegible] equ[illegible] 0.
	ST[illegible]	[illegible]owned [illegible]erprise[illegible]	[illegible] if t[illegible]nte[illegible] more [illegible] 50% [illegible]ed [illegible]d vice versa, it is equal to 0
3	AGE	Age of enterprises	The age of enterprises is calculated since the enterprises officially register their business.
4	CFO	Do enterprises have a CFO?	CFO=1 if enterprises have a CFO and vice versa, it is equal to 0
5	ROA		Profit after tax on Return on assets
6	Sale_growth	Sale growth	Sale_growth =1 if sale growth in 2016 is greater than that of 2015 and vice versa, it is equal to 0
7	Profit	Profit situation	Profit =1 if after-tax profit of 2016 is positive and vice versa, it is equal to 0
8	Collateral	Collateral	collateral =1 if enterprises have collateral available and vice versa, it is equal to 0
9	Corruption	Cost of bribes, gifts ...	corruption =1 if enterprises spent bribes and gifts to get loans from banks
10	Interest	Interest rates paid by enterprises for loans are high	Interest=1 if enterprises currently have to pay high interest rates and vice versa, it is equal to 0
11	Distance	Spatial distance from enterprises to banks	Distance=1 if enterprises said the bank is far too far away from the enterprises and vice versa, it is equal to 0
12	Plan	Business plan of enterprises	Plan=1 If enterprises have a specific business plan when applying for a loan and vice versa, it is equal to 0
13	Relations	Relationship between enterprises and banks	Relations=1 if enterprises have close relationship with banks and vice versa, it is equal to 0
14	Procedure	Procedures for accessing credit from banks	Procedure=1 nếu DN if enterprises said that the procedures for applying for a bank loan is complicated and time-consuming and vice versa, it is equal to 0
15	Floan	Loans from acquaintances, families, friends	Floan=1 if enterprises are currently raising capital from acquaintances, families, friends ... and vice versa, it is equal to 0
16	Stockmarket	Listed on the stock market	Stockmarket =1 if enterprises have been listed on the stock market and vice versa, it is equal to 0

mate the impact of factors affecting the disbursement probability of a loan of an enterprise. Probit and Logit model is known as regression model where dependent variables are discrete and accept only two possible values of 0 and 1. In the Probit and Logit model, disbursement probability of a loan or loan application of enterprises is described in the form of a nonlinear function of a set of regression variables X that can be written in general form as follows:

$$P(Y=1)=\varnothing(X'\beta)=\int_{-\infty}^{X'\beta}\varnothing(z)dz \quad (1)$$

$$P(Y=1)=\Lambda(X'\beta)=\frac{e^{X\beta}}{1+e^{X\beta}} \quad (2)$$

In particular, $P(Y = 1)$ is the probability of a business loan accepted to disburse by the banks; X is the set of selected explanatory variables; $\varnothing(X'\beta)$ is the symbol of the cumulative distribution function of standard distribution, $\Lambda(X'\beta)$ is the cumulative distribution function of logistic distribution.

Equations (1) and (2) show the conditional probability in which a business loan accepted to be disbursed by the banks as a function of the factors influencing the decision making ability of the financial institutions or commercial banks to approve the loan application of the enterprises in the samples (X). In particular, the set of variables X includes variables: SME, STAT, AGE, CFO, ROA, Sale_growth, Profit, Collateral, Corruption, Interest, Distance, Plan, Relations, Procedure, Floan and Stockmarket.

3. Results of experimental model estimate

The results obtained from the Logistic and Probit model in Table 3 show that the estimated coefficients are statistically significant, affecting the probability of a business loan application accepted to disburse by the financial institutions. Although the coefficients estimated from Logistics model are larger than those estimated from Probit model, the estimated results show that the direction of impact of the variables in the two estimation techniques gives quite similar results.

Because the interpretation of the magnitude of the coefficients estimated in Probit model and Logistic model is not the same as the linear regression or OLS regression model. Therefore, the interpretation of the impact of factors on the probability that firms are able to access loans from the financial and banking system will be explained by the impact of the estimated average marginal effects (AME) of the independent variables. Specifically:

– For the SME variable, Probit model estimate shows that the probability of a loan application from an SME being accepted will decrease by 23.7 percentage points if an SME is applying for a loan, corresponding to that of Logistic model which is 26 percentage points.

– For variables that reflect characteristics of enterprises such as state ownership variable

Table 3

Results of Logistic and Probit estimates of factors affecting probability of access to loans from credit institutions

Variables	Logistic model		Probit model	
	Coefficient	AME[1]	Coefficient	AME
SME	-1,122***	-0,260***	-0,623***	-0,237***
	(-81,90)	(-97,65)	(-72,65)	(-78,47)
STATE	0,116**	0,028**	0,059**	0,023**
	(2,[illegible]	[illegible]65)	(2,[illegible]	(2,73)
AGE	0,[illegible]	[illegible]***	0,[illegible]	0,016***
	[illegible]2)	[illegible]77)	[illegible]2)	(6,8[illegible]
CFO	[illegible]3***	[illegible]1***	[illegible]89***	0,07[illegible]***
	(16,84)	(16,84)	(17,79)	(17,89)
ROA	0,274*	0,066*	0,137*	0,053*
	(2,28)	(2,29)	(2,46)	(2,46)
Sale_growth	0,371***	0,089***	0,213***	0,083***
	[illegible]	[illegible]	[illegible]	[illegible]05)
[illegible]	[illegible]47***	0,[illegible]***	[illegible]226***	0,0[illegible]***
	[illegible],22)	[illegible])	(6,77)	(6[illegible]
Collateral	[illegible]	0,[illegible]***	[illegible]*	[illegible]***
	(60,02)	(79,73)	(42,69)	(53,25)
Corruption	1,200***	0,240***	0,490***	0,176***
	(61,96)	(102,94)	(210,97)	(291,41)
Interest	0,476***	0,117***	0,267***	0,105***
	(5,74)	(5,72)	(6,69)	(6,67)
Distance	-0,671***	-0,159***	-0,387***	-0,149***
	(-5,43)	(-5,63)	(-5,97)	(-6,11)
Plan	0,136***	0,033***	0,097***	0,038***
	(13,97)	(13,70)	(27,79)	(27,42)
Relations	0,213	0,052	0,117	0,046
	(0,99)	(0,99)	(0,98)	(0,97)
Procedure	-0,484***	-0,117***	-0,291***	-0,114***
	(-9,69)	(-9,62)	(-10,94)	(-10,91)
Floan	-0,217***	-0,052***	-0,109***	-0,042***
	(-16,53)	(-16,32)	(-10,06)	(-10,05)
Stockmarket	0,270**	0,063**	0,213***	0,081***
	(2,88)	(2,97)	(4,96)	(5,12)
Cons	-1,890***		-1,127***	
	(-7,47)		(-8,35)	
N	675	675	675	675

Notes: *** p<0.01, ** p<0.05, * p<0.1
[1]Average Marginal Effect - AME
(Source: Estimated results from the model)

(STATE), the number of years of operation of enterprises (AGE), estimated results from Probit and Logistic models, the acceptance probability of a loan will increase by 2.3 percentage points and 2.8 percentage points if enterprises that submit applications for loan are state-owned enterprises. Thus, it is possible to see that the type of state-owned enterprises still has a direct impact on the accessibility to capital of enterprises.

The number of years of operation in the market of enterprises also has a positive impact on the ability of enterprises to access loans. Estimates show that if the number of years of operation increases by one year, the acceptance probability of a loan increases by 1.6 to 1.8 percentage points. This implies that older enterprises have a better credit history and are more likely to have access to loans from financial institutions. Enterprises with CFOs, the bank's access to capital will also increase. Under Probit model, if enterprises have CFOs, the acceptance probability of loans will increase by 7.3 percentage points, corresponding to the Logistic model is 9.1 percentage points.

– For variables that reflect the business performance of an enterprise, the estimated results from the Probit and Logistic models show that if the ROA increases by 1%, the acceptance probability of applying for an loan increases by approximately 6.6 percentage points and 5.3 percentage points respectively. This shows that the more efficiently an enterprise manages its assets, the easier it is to get access to loans. In addition, the estimated coefficients of sale growth variation (Sale_growth) and profit (Profit) have a positive effect on the bank's decision to accept disbursement for loan applications. Table 1 shows that when enterprises have growth in sale and profitability, the acceptance probability of loan applications by banks will increase by 8.3 and 8.9 percentage points (corresponding to estimated results from Probit model) and 8.9 and 8.5 percentage points (corresponding to the results obtained from Logistic model).

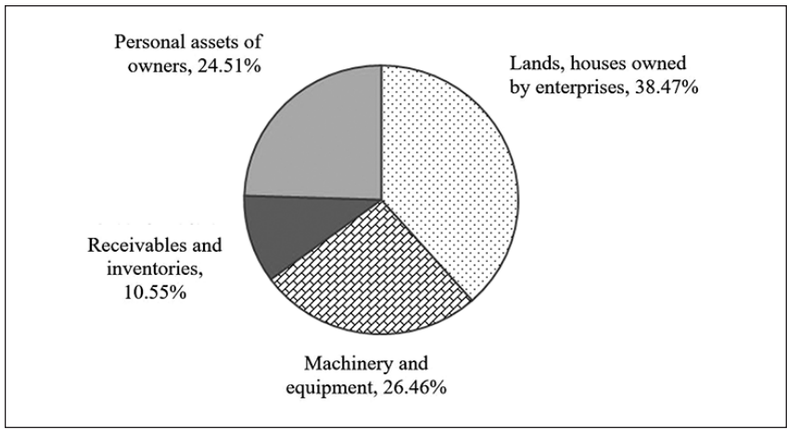


Figure 3. The share of assets used as collateral
(Source: Report 2017)

– For variables that reflect the characteristic effect of collateral (Collateral), the estimated results from the models indicate that collateral availability has a significant impact on decisions to lend the enterprises. The estimated coefficients of both models are statistically significant at 1%, which implies that loan applications with collateral, the acceptance probability increases by 59.6 percentage points. Hence, the estimated results from Probit model and 61.3 percentage points for the results obtained from Logistic model. This result clearly shows that the availability of collateral when applying for a loan plays an important role in whether the loan application of the enterprises is accepted.

To better understand this issue, we need to know the structure of the current collateral that banks are asking enterprises. According to survey data in the samples, the most common types of collateral required by the credit institutions when enterprises apply for a loan are lands, houses owned by enterprises which occupy approximately 38.47%; machinery and equipment account for 26.46%; Personal assets account for 24.51% and the remaining receivables and inventories are 10.55% (Figure 4). This result again confirms why enterprises, especially SMEs, find it difficult to access loans from credit institutions. The main reason is that they are difficult to meet the collateral requirements of credit institutions because most of production premises, machinery and equipment of SMEs are leased.

– For variables that reflect unofficial costs for accessing loans such as the cost of bribes, gifts... (Corruption), the results obtained in Probit and Logistic models are the same and positive and statistically significant at 1%. This implies the probability that an enterprise will be able to access a loan from a credit institution as it pays out the cost of bribes. The results from Logistic model show that this probability increases by about 24 percentage points and equivalent to Probit model of 17.6 percentage points. This shows that unofficial costs are still one of the barriers for enterprises to access official capital from credit institutions, especially for SMEs.

– If enterprises accept to pay higher interests, the probability of accessing bank loans will increase by 10.5 percentage points (for Probit model) and 11.7 percentage points (for Logistic model). However, for SMEs and private enterprises, when financial resources are very limited, high

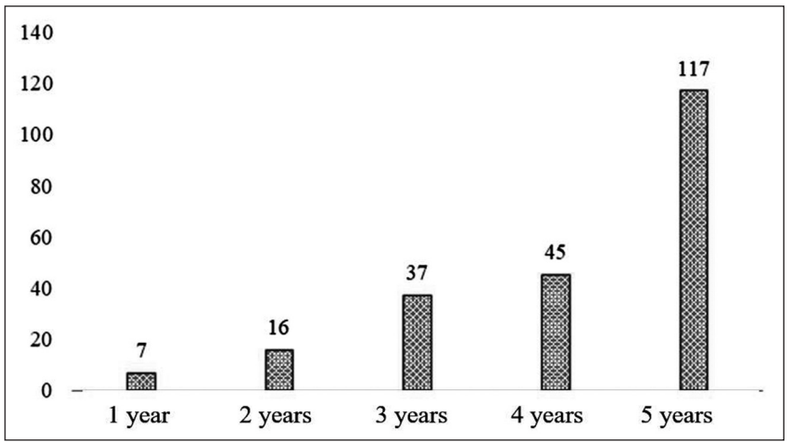


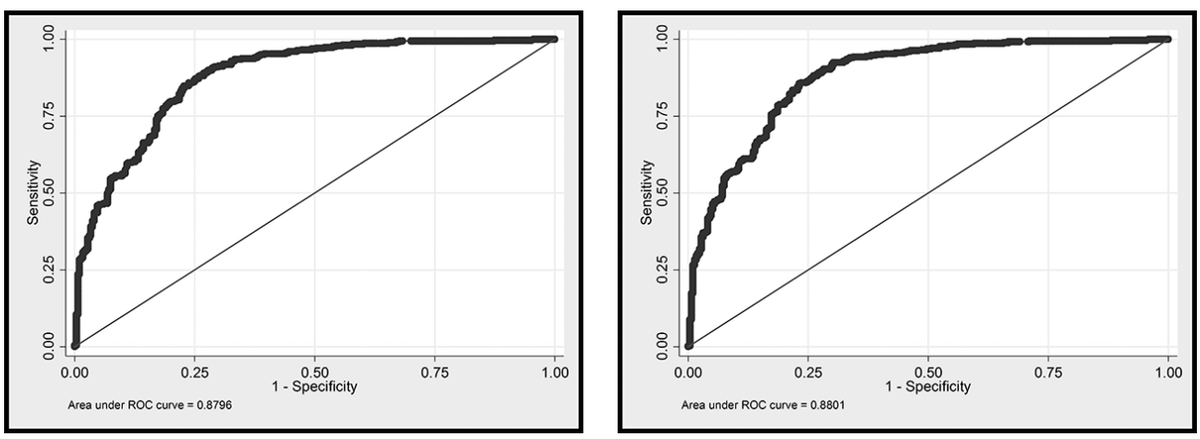
Figure 4. The number of enterprises in the samples that intend to list on the stock market over the next five years
(Source: Report 2017)

interests for access to commercial bank loans are great barriers for them. The survey also showed that 64.8% of SMEs' equity is smaller than the average capital of SMEs in the sample (VND billion). The estimated coefficient of the distance variable from enterprises to the commercial bank (Distance) and the variable reflecting procedures for accessing bank loans (Procedure) have a negative impact and are statistically significant at 1%. This suggests that the location of enterprises is too far from the banks, the acceptance probability of bank loans decreases by about 15 percentage points. At the same time, enterprises now believe that procedures for accessing bank loans are complex and time-consuming, thus making the probability of accessing to loans from banks of enterprises decreases by 11 percentage points.

The estimated results show that if the business is supported from the acceptance probability of the loans estimated from Probit and Logistic model will increase by 3.8 percentage points and 3.3 percentage points respectively. The estimated coefficient of the enterprises' relationship with the banks (Relation) is positive but not statistically significant. This implies that the enterprises' relationship with the banks only makes enterprises entitled to more convenient procedures for accessing loans from banks but it does not decide whether the loans will be approved by the banks.

– The estimated coefficient of Floan variable is negative and is statistically significant when enterprises access to capital from their relatives, families and friends; it has a negative impact on their accessibility to official sources from credit institutions. This implies that this unofficial source is not a complementary source of capital but a substitute when enterprises are unable to access capital from commercial banks.

– The estimated coefficient of the Stockmarket variable, representing the development of the capital market, is positive and statistically significant. The effect of this variable on the probability of accessing loans by enterprises from credit institutions is about 8.1 percentage points and 8.3 percentage points – estimated from Probit and Logistic models respectively. This implies that when the capital market develops, it forces enterprises to make their finances transparent, which makes it easier for enterprises to access capital from financial institutions. Survey data in the same period also show that the number of enterprises that wish to list on the stock market tends to increase rapidly over the next five years. Obviously, if enterprises are listed on the stock market, it is not only easier for them to access loans from credit insti-



a. Probit model

b. Logistic model

Figure 5. Statistical value of ROC line
(Source: Estimated results from the model)

tutions but can also be funded by debt instruments of financial markets through the issuance of corporate bonds.

4. Verifying the conformity of the model

To test the suitability of Probit and Logistics model, the ROC verification statistic and the correct prediction rate of the model were used. According to Stock and Watson (2007), if the dependent variable $Y_i = 1$ and the predicted probability is greater than 50% or $Y_i = 0$ and the predicted probability is less than 50% then Y_i is called the correct prediction. In contrast, Y_i is called false prediction.

The estimation model is correct when the accepted loan applications in the model [illegible] 81% and Logistic model is 87%. The correct prediction for rejected loan applications in Probit and Logistic models are 72.7% and 72.37% respectively. Thus, the correct prediction percentage of Probit model and Logistic model is equivalent to 80.86%.

At the same time, the ROC statistic result is also quite high, the ROC value estimated from Probit model is 0.8796 and Logistic model is 0.8801. The results of these tests show that the results obtained from the two models are reliable.

5. Conclusion

SMEs are important components of the economy of Vietnam with contributions to the state budget, creating jobs, mobilizing domestic capital for business and production and solving social problems. However, difficulty in mobilizing capital is a big obstacle for the development of [illegible]. Therefore, the government should [illegible] ment policies to support [illegible] credit institutions apply flexible in [illegible] credit in all aspects, such as: supporting human resources training; supporting information on mechanisms, policies, information on market prices, technology...; supporting start-ups in innovation. In addition, the Government supports the activities of the Association of SMEs to promote the role of providing information and bridging between SMEs and credit institutions, as well as domestic and international markets.

Credit institutions should: design appropriate products and services to the characteristics of SMEs. In addition, strengthening the role of the Association of SMEs; enhance cooperation between credit institutions and credit guarantee funds; enhance the training, business management consulting, financial management and education for SMEs... SMEs should: improve the transparency; raise the competence of [illegible] be flexible to work with [illegible] apply flexible in scientific and technological achievements; attach importance to raising the quality of human resources.

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