



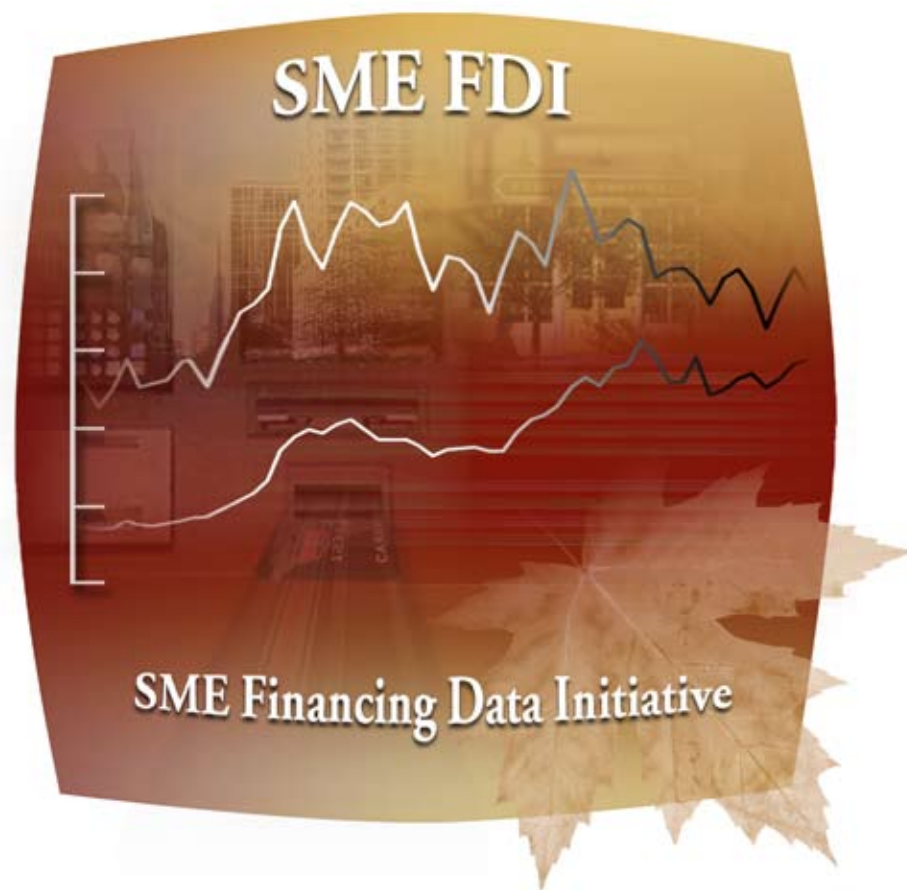
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**AN INTERPRETATION OF DISCOURAGED BORROWERS  
BASED ON RELATIONSHIP LENDING**

**WORKING PAPER**

**AUGUST 2010**



**SMALL BUSINESS AND TOURISM BRANCH  
INDUSTRY CANADA**

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# TABLE OF CONTENTS

<b>ACKNOWLEDGEMENTS</b> .....	ii
<b>ABSTRACT</b> .....	ii
<b>I. INTRODUCTION</b> .....	1
<b>II. THEORY AND PREVIOUS EVIDENCE</b> .....	3
<b>III. DATA AND DESCRIPTIVE STATISTICS</b> .....	6
<b>IV. METHODOLOGY</b> .....	7
A) RELATIONSHIP WITH MANAGER/BANK .....	7
B) BUSINESS CHARACTERISTICS .....	8
C) OWNER CHARACTERISTICS .....	9
D) CONTROL VARIABLES.....	9
<b>V. EMPIRICAL RESULTS</b> .....	10
A) DISCOURAGED BORROWERS VERSUS APPLICANTS.....	12
1. Relationship with the Financial Institution.....	12
2. Characteristics of the Firm .....	13
3. Characteristics of the Owner .....	13
B) DISCOURAGED VERSUS DENIED AND APPROVED BORROWERS.....	15
1. Relationship with the Financial Institution.....	15
2. Characteristics of the firm.....	16
<b>VI. CONCLUSION</b> .....	19
<b>BIBLIOGRAPHY</b> .....	20

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## **ABSTRACT**

This paper investigates the determinants of discouragement for Canadian small and medium-sized enterprises (SMEs) using firm-level data originating from the Small and Medium-Sized Enterprise Financing Data Initiative (SME FDI) 2004. We partially confirm the idea that discouraged borrowers are generally riskier than applicants. Furthermore, we find some evidence that discouraged borrowers have stronger relationships with their financial institution than do denied borrowers. In that sense, discouraged borrowers have better information on themselves and on their financial intermediary and can thus more realistically assess their chances of acceptance. Consequently, they decide not to apply because they are aware of their higher risk.

JEL Classification: G14, G21

## **I. Introduction**

Small and medium-sized enterprises (SME) play a major role in the Canadian economy: 99 percent of businesses in Canada have fewer than 500 employees and they employ 64 percent of workers in the private sector (Industry Canada, 2008). These businesses face many challenges; one of them is access to financing. Because it is difficult to understand a business' inner workings, or so-called informational opacity (Berger and Udell, 2006), SMEs face a particularly acute asymmetric information problem when entering a banking relationship. In other words, banks know much less about the business than the business owners do. Even though this problem also affects bigger businesses, it is worse for SMEs, because they often lack the track record and accounting reports to prove their quality. Banks therefore have difficulty choosing good SMEs (adverse selection), and SMEs cannot commit to a given project (moral hazard). Stiglitz and Weiss (1981) developed a model that shows that these problems can lead to credit rationing and some worthy SMEs might not receive any or sufficient financing. In this model, given a low enough interest rate, all borrowers apply for financing, thus making it possible to use the refusal rate as an indication of credit rationing.

However, if loan application costs are added to the imperfect screening model, some worthy SMEs might not even apply for needed financing because they fear their request will be refused. They are so-called discouraged borrowers (Kon and Storey, 2003). If this fear is irrational, borrowers denied financing could only be the tip of the credit rationing iceberg. Indeed, Levenson and Willard (2000) find that there are twice as many discouraged borrowers as rejected borrowers using the U.S. National Survey of Small Business Financing (NSSBF) 1987.

In this framework, discouraged borrowers would have a good credit quality but lack the necessary confidence to apply for financing. Examining the behaviour of potentially victimized socio-economic groups, Cavaluzzo et al. (2002) find, for example, that African-American- and Hispanic-owned firms were more likely to avoid applying for credit. If fear of prejudice affects the application decision, policies are needed to empower those fearful segments of the population. Han et al. (2009), however,

challenge this view by showing that discouraged borrowers are usually riskier than applicants. In that sense, discouragement would be an efficient self-rationing mechanism. Risky borrowers have a small chance of being approved, and therefore do not incur the cost of applying in the first place.

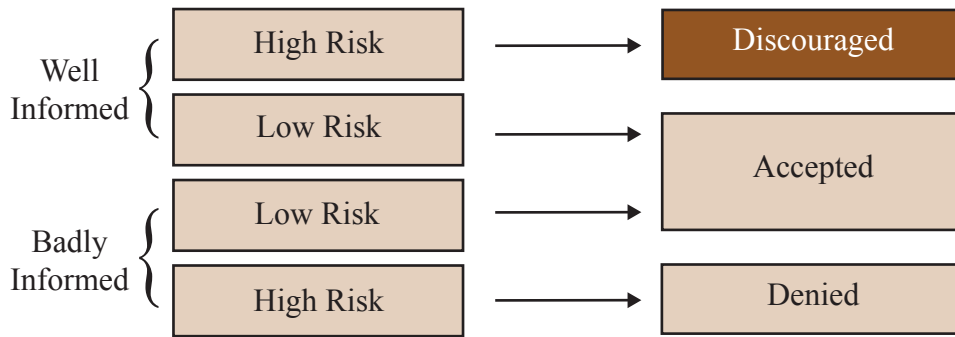
This paper goes along the same line and argues that discouraged borrowers are simply realistic borrowers with a high risk<sup>1</sup> as shown on Chart 1. In our setting, discouraged borrowers include firms that: do not apply for financing for fear of being refused independent of their risk profile; denied borrowers applied for financing in the 12 months preceding the survey but were denied financing as a result of their requests; and approved borrowers applied and were approved financing from at least one financial institution in the 12 months preceding the survey.

While Han et al. (2009) focus mostly on financial variables and expect SMEs to be aware of their risk profile, we explicitly model the learning process of SMEs and show that discouraged borrowers have acquired good information about themselves and their financial intermediary through their use of relationship lending. Discouraged borrowers are, for example, more satisfied with their relationship with their account manager. They also tend to be more prevalent in credit unions. Finally, they are riskier than applicants in that they are generally smaller and they report the same financing difficulties as denied borrowers. We are the first to use the Canadian Small and Medium-Sized Enterprise Financing Data Initiative (SME FDI) *Survey on Financing of Small and Medium Enterprises, 2004* in the nascent discouraged borrower literature, which is so far mostly based on the *National Survey of Small Business Financing* – NSSBF (e.g., Cole, 2009 and Han et al., 2009).

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<sup>1</sup> To avoid confusion, we will keep the coined expression “discouraged borrower” throughout the paper, even though we do not think that actual discouragement plays a role in this phenomenon.

**Chart 1: Simplified Diagram of Discouragement**



In this simplified framework, borrowers are different based on two criteria: information and risk. Well-informed borrowers only apply for financing when they are a low risk. Badly-informed borrowers always apply because they cannot determine their level of risk, so they simply take a chance. Accepted borrowers were accepted by a financial institution, but not necessarily by the first one they approached.

The rest of the paper is structured in the following way: Section II presents relevant theory and previous evidence; Section III discusses the data and descriptive statistics; Section IV explains the methodology; Section V provides the results; and Section VI provides the conclusion.

## II. Theory and Previous Evidence

Kon and Storey (2003) develop the first theoretical model explaining discouraged borrowers defined as good firms that do not apply for financing for fear of refusal. They conclude that the application cost, the screening error and the informational environment play a role in determining discouragement levels. More specifically, they show that, as good (bad) borrowers learn their actual quality, the number of discouraged borrowers decreases (increases). Han et al. (2009) test the model using the NSSBF 1993 and find that generally firms, which do not apply for financing for fear of rejection, have a higher risk in comparison to other capital seekers. Discouraged borrowers have, for example, lower Dun and Bradstreet scores than applicants. Instead of only comparing capital seekers with discouraged borrowers, Cole (2009) adds another category to the analysis: SMEs that were denied financing. Based on three versions of the NSSBF (1993, 1998 and 2003), he systematically finds like Han et al. (2009) that discouraged borrowers are riskier than capital seekers, but this time on account of business delinquency

and asset size. However, when comparing discouraged and denied SMEs, the only systematic difference is the number of bank and non-bank sources used for financing. Denied SMEs use more sources, and therefore have weaker relationships with any one source. Moreover, in 2003, denied SMEs had shorter relationships with their main financial institution than did discouraged ones. Chakravarty and Xiang (2008) also find that discouraged borrowers in underdeveloped countries have relationships with fewer banks. Finally, Bonnet, Cieply and Dejardin (2009) find that discouraged borrowers have highly developed relations with banks.

Two variables used to explain discouragement — number of financial sources and length of relationships — also play a major role in the relationship lending literature summarized by Elyasiani and Goldberg (2004). We offer here a brief survey of publications linking bank relationships to the availability of financing. The general idea is that a stronger relationship gives more information to the bank and allows it to take a better decision.

While Berger and Udell (2005) show that firms with longer relationships with banks enjoy better lending conditions, Petersen and Rajan (2004) are the first to link explicitly the lending relationship with financing availability. Using the NSSBF 1987, Petersen and Rajan (2004) find that longer banking relationships and concentrated financial markets increase the availability of funds, while the number of financial intermediaries decreases it. The intuition underlying the first finding is that longer relationships chip at the information asymmetry separating borrower and bank, and the fact that financial institutions need a monopolistic position for it to be worthwhile for them investing in a relationship explains the second and third finding. The authors use late repayment of trade credit as a signal that firms have difficulty receiving conventional and cheaper financing. Harhoff and Körting (1998) support these findings with a survey of approximately 1000 German SMEs, again using late repayment of trade credit.

Cole (1998) turns away from trade credit to consider the actual acceptance decisions of banks reported in the NSSBF 1993. He finds, among other things, that the length of the relationship does not play as much a role as the sheer existence of a relationship. Chakravarty and Yilmazer (2005) complements



these results using the NSSBF 1998 by showing that the total number of savings accounts and the number of loans at a potential lending institution affect only the application and acceptance rate, but not the cost of financing.

There is certainly evidence that relationships play a role in financing decisions, but it is unclear in which settings. Berger and Udell (2002) argue for the importance of the small size of financial institutions and for decentralisation in order to enable relationship lending. Cole, Goldberg and White (2004) examine the size issue with the NSSBF 1993. They separate banks into two size groups based on a threshold of banking assets of US\$ 1 billion and find that smaller banks tend to rely more on personal contact when considering a loan application, while bigger banks look at quantitative information. Vos et al. (2007) go further and show that financial information does not seem to play a role in the loan granting decision by examining the NSSBF 1998 and the membership survey of the British Federation of Small Business 2004. Finally, Lehman and Neuberger (2001) address the issue of decentralisation by considering the relationship between SME and account manager. In addition to the usual variables, which proxy for the relationship between bank and SME, they include the following variables that describe the relationship between the account manager and the SME: positive experience in the past, obligation to the partner, willingness to inform and stability of the relationship. Of those, both the positive experience and the willingness to inform play an important role in the decision of the bank to award credit.

In this paper, we combine the relationship lending and discouraged borrower literatures. The idea is that banks are not the only ones collecting information through stronger relationships; SMEs also gain information about themselves and about their bank through the same process. Just like Cole (2009), we not only compare discouraged borrowers with applicants, but also with denied borrowers. In this analysis we include variables that account for the length of the relationship between the bank and the SME following Petersen and Rajan (1994). Furthermore, we also consider a variable that determines if the SME has a designated account manager along the lines of Cole (1998) to see if a relationship exists. We also include variables that describe the relationship between account manager and SME as

in Lehman and Neuberger (2001). Finally, we use the satisfaction of SMEs concerning convenience and accessibility and service charges to proxy for application cost as suggested by Kon and Storey (2003).

### **III. Data and Descriptive Statistics**

We use Statistic Canada's *Survey on Financing of Small and Medium Enterprises*, 2004, a part of the Small and Medium-Sized Enterprise Financing Data Initiative (SME FDI), which targets Canadian SMEs and investigates their financing behaviour. The main objective of this survey is to determine what type of SMEs request financing in the form of debt, leasing, equity and trade credit, and which SMEs are approved. The survey also contains some general information concerning the SME, the banking relationship, and some financial information.<sup>2</sup>

We define discouraged borrowers as those who do not apply for one of the three following reasons: fear of being turned down, difficulty of applying and the length of the application procedure. The first reason is the traditional one, while the two last reasons correspond to problems related to application costs as discussed by Kon and Storey (2003) as a cause for discouragement. Applicants are SMEs that applied for one of the following financing forms: credit, leasing, equity or trade credit. Denied SMEs did not receive any financing from these four means, while approved SMEs received some from any one of them. Of the large sample of 12 047 SMEs, we find 62 discouraged, 552 approved and 160 denied SMEs with no missing values. Denied borrowers outnumber discouraged borrowers by almost 3 to 1. If we only consider debts financing, the ratio goes down to 2 to 1. This latter ratio is the same as the one reported by Chakravarty and Yilmazer (2005).

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<sup>2</sup> For more information on this survey, see the following website: [www.sme-fdi.gc.ca/eic/site/sme\\_fdi-prf\\_pme.nsf/eng/01561.html](http://www.sme-fdi.gc.ca/eic/site/sme_fdi-prf_pme.nsf/eng/01561.html).

## **IV. Methodology**

To explain discouragement, we use the following four blocks of explanatory variables: relationship with the manager/bank; business characteristics; owner characteristics; and control variables. The following paragraphs will detail the content of the four blocks.

### ***a) Relationship with Manager/Banker***

As is common throughout the relationship lending literature, we believe that the relationship with the manager and bank plays a major role in the availability of financing through a reduction of information asymmetry. First, the level of satisfaction reported by the SME shows the intensity/closeness of the relationship between account manager and SME. A strong relationship would help both parties overcome the information asymmetry. As much as the account manager would learn about the SME, the SME would also gain knowledge on the criteria used by the account manager. We use the satisfaction for five criteria: convenience and accessibility; service charges; understanding the business needs; relationship with account manager; and overall quality of service. Each of the five criteria is rated on a Likert scale from 1 to 7 — seven being the highest satisfaction. According to our hypothesis that discouraged borrowers are simply more realistic, we expect discouraged borrowers to have a higher satisfaction with respect to the relationship with the account manager and overall quality of service. If the application cost explanation is valid, variables like convenience or service charges will be significant and negative when explaining discouragement. If discouraged borrowers are indeed victims, their satisfaction will be generally low.

Second, as reported in Berger and Udell (2002), the decentralization of approval decisions gives more weight to relationship lending. Consequently, we use a dummy variable for the usage of a credit union as main financial intermediary. In Canada, the six most important banks occupy 90 percent of the market calculated in assets (Allen and Engert, 2007) and approximately 65 percent of the Canadian portfolio (Industry Canada, 2006 p.33). Credit unions, therefore, play the role of small banks in the US.

Credit unions, just like small banks, are known to focus on relationship lending (Berger and Udell, 2002), which tends to foster information exchange between financial institutions and credit seekers. We expect higher discouragement in credit unions due to the better information exchange. Finally, as is customary, we use the length of the relationship with the bank and whether the SME has an assigned account manager as an indication of the relationship. Longer relationships should lead to better information for both parties.

### ***b) Business Characteristics***

Business characteristics will also affect discouragement by determining the actual information asymmetry and application cost. First, businesses identify their obstacles to growth within the following list: obtaining financing, management skills, and low profitability. Businesses identifying, for example, management skills as an important obstacle to growth might face higher application cost, thus leading to discouragement. Second, urban businesses could benefit from the presence of other businesses to benchmark and determine their quality. Third, the age of the SME should give it the experience to deal better with banks, thus reducing application cost. At the same time, more experienced firms can better assess their chances at getting financing. Predictions are therefore mixed. The same argument can be used for the number of employees. Fourth, exporting SMEs are probably better at dealing with administrative burden, reducing application cost and should therefore be less discouraged. Fifth, firms intensive in research and development are probably more difficult to understand for a banker. For that reason, the information asymmetry about the quality of the firm might be more important. However, it could also be that firms intensive in research and development fear they will never be understood, and therefore do not even attempt to build a relationship with a financial institution. The impact of this variable is therefore mixed. Sixth, firms intending to grow will probably invest in a relationship with a bank, and thus feel they can correctly assess their financing chances, making them prone to discouragement. Finally, financial data, according to Vos et al. (2007), is irrelevant to the financing process, but, according to Han et al. (2009), it is precisely the factor distinguishing applicants from

discouraged borrowers. We will be able to see which vision prevails using the return on asset, quick ratio, interest coverage and sales.

***c) Owner Characteristics***

In the cases of SMEs, the owner's characteristics are hard to separate from those of the business, and should therefore also be considered. First, the age and experience of the owner are probably correlated with realistic expectations concerning financing decisions. However, these borrowers probably have lower application costs, making it impossible to predict the effect on discouragement. Second, we use a dummy variable to identify handicapped, immigrant, Aboriginal and visible minority borrowers. Following Cavaluzzo et al. (2002), minorities might be fearful, and therefore might not apply for financing. Unfortunately, we do not have the level of detail necessary to differentiate between ethnic minorities, making it impossible to confirm Cavaluzzo et al. (2002).

***d) Control Variables***

We finally use two control variables: region (Atlantic, Quebec, Ontario, Prairies, British Columbia and Territories), industries (primary and agriculture, manufacturing, retail sector, professional services, knowledge-based industries, tourism and other).

Those variables are first used in simple logistic regressions to model the occurrence of discouragement within SMEs needing financing. We then evaluate multinomial logistic regressions to compare discouraged, approved and denied borrowers. The results correspond to the ones of the simple logistic regressions. To further check for robustness, we also consider logistic regressions taking only loans into account. These results are not significantly different from those taking the four financing technologies into account, and are therefore not presented.

## **V. Empirical Results**

The univariate results contained in Table 1 allow for a comparison between discouraged borrowers and applicants, and between discouraged and both accepted and denied borrowers. First, we see that applicants are generally more satisfied than discouraged borrowers, and denied applicants are less satisfied than accepted borrowers. However, when we compare denied and discouraged borrowers, we see that discouraged borrowers are more satisfied with their account manager than are denied borrowers.

When looking at the relationship variables, we find that discouraged borrowers: deal more often with credit unions, have fewer relationship years with their financial institution, and are less often with a designated account manager as compared to applicants.

These results are probably linked to the fact that discouraged SMEs are — in comparison to applicants — 3.21 years younger, have 9.9 fewer employees, and have \$2.3 million less sales. Younger SMEs, for example, would necessarily have shorter relationships with their banks. As for their obstacles to growth, discouraged borrowers are less likely to report problems related to management skills, while they are more prompt to report problems pertaining financing than both applicants and denied borrowers.

The sample size for financial information is too small to draw any conclusions as to whether discouraged borrowers are riskier than denied ones as reported by Kon and Storey (2009). Finally, there are fewer discouraged borrowers in the primary sector and manufacturing and more in tourism.

**Table 1: General Characteristics of Small and Medium-Sized Enterprises**

		Discouraged		Applicants		Approved		Denied		Significant Differences	
		(N=62)		(N=711)		(N=552)		(N=160)		Discouraged Applicants	Discouraged Denied
		Mean	N	Mean	N	Mean	N	Mean	N		
<b>Satisfaction</b>	Convenience and Accessibility	5.19		5.53		5.59		4.84			
	Services Charges	3.79		4.31		4.35		3.65		Yes	
	Understanding Business	4.11		4.91		5.07		3.38		Yes	
	Relation with Account Manager	5.35		5.43		5.55		4.38			
	Overall Quality	5.00		5.37		5.44		4.55			
<b>Relationship</b>	Credit Union (Binary)	29.03%		24.05%		25.54%		15.93%		Yes	
	Years of Relationship	7.05		9.54		9.83		7.11		Yes	
	Designated Manager (Binary)	50.00%		75.67%		76.09%		71.68%		Yes	Yes
<b>Problems</b>	Financing	62.90%		39.52%		34.96%		79.65%		Yes	
	Management	12.90%		18.85%		18.66%		13.27%			
	Profitability	53.23%		41.91%		41.30%		41.59%			
<b>Business</b>	Rural (Binary)	24.19%		32.91%		35.33%		19.47%		Yes	
	Age of SME	8.76		11.97		12.17%		9.04			
	Exporting (Binary)	11.29%		17.30%		16.49%		22.12%			
	R & D Investment	1.68		1.58		1.57		0.05			
	Intent to Grow (Binary)	72.58%		63.15%		61.96%		73.45%			
	Full Time Equivalent	3.23		13.13		13.91		8.66		Yes	Yes
	Return on Asset	0.20	10	0.13	158	0.12	126	0.13	32		
	Current Ratio	3.96	10	2.74	158	2.82	126	2.77	32		
	Interest Coverage	0.29	10	0.20	158	0.19	126	0.02	32		
Sales	\$306,827	10	\$2,563,666	158	\$2,401,224	126	\$1,091,071	32	Yes	Yes	
<b>Owner</b>	Experience (Years)	10.24		11.57		11.54		11.02			
	Age (Years)	46.69		48.23		47.84		47.70			
	Disability (Binary)	3.23%		3.23%		2.90%		4.42%			
	Immigrant (Binary)	1.61%		1.83%		2.17%		0.88%			
	Aboriginal (Binary)	1.61%		3.23%		3.62%		2.65%			
	Visible Minority (Binary)	12.90%		7.59%		7.07%		8.85%			
<b>Region</b>	Atlantic	14.52%		14.91%		15.76%		9.73%			
	Quebec	22.58%		29.25%		29.89%		26.55%			
	Ontario	32.26%		21.24%		21.38%		21.24%		Yes	
	Prairies	17.74%		20.25%		20.83%		20.35%		Yes	
	British Columbia	8.06%		12.24%		10.51%		19.47%			Yes
	Territories	4.84%		2.11%		1.63%		2.65%			
<b>Sector</b>	Primary and Agriculture	3.23%		13.78%		15.04%		5.31%		Yes	
	Manufacturing	3.23%		12.80%		12.50%		15.04%		Yes	Yes
	Wholesale and retail	12.90%		16.74%		16.12%		21.24%			
	Professional Services	8.06%		7.17%		7.25%		8.85%			
	Knowledge Based Industry	8.06%		8.16%		7.97%		7.96%			
	Tourism	27.42%		12.10%		10.69%		15.93%		Yes	
	Other	37.10%		29.25%		30.43%		25.66%			

Note: The number of observations for a variable is only indicated if it does not correspond to the general number of observations for the sample (N). All variables concerning satisfaction are on a 1 to 7 scale — seven being very satisfied. FTE stands for full time equivalent. Current ratio is calculated as current asset/current liability. Interest coverage is interest payment/ EBIT. The number of denied and approved borrowers does not sum to the number of applicants, because some applicants had not received an answer at the time of the survey.

**a) *Discouraged Borrowers versus Applicants***

There is a fundamental question concerning discouraged borrowers. Why don't discouraged borrowers apply for financing when approval rates are around 80 percent (Industry Canada, 2006 p.10)?

This logistic regression answers precisely that question by comparing discouraged borrowers with applicants. We use four specifications to identify the determinants of discouragement. Through the four specifications, the coefficients are stable and the Hosmer-Lemeshow goodness-of-fit indicator is not significant, which indicates a good fit. We confirm the idea that discouraged borrowers are generally smaller than applicants, and give some evidence that relationship variables play a role in the discouragement process. A detailed analysis of important variables follows.

*1. Relationship with the Financial Institution*

Following the discrimination literature, discouraged borrowers should not be satisfied with the relationship they have with their account managers, because they probably feel victimized by them. However, discouraged borrowers have a significantly better relationship with their account manager than do applicants (Table 2). Furthermore, discouraged borrowers tend to deal more with credit unions than banks. Credit unions, just like small banks, are known to focus on relationship lending (Berger and Udell, 2002), which tend to foster information exchange between financial institutions and credit seekers. Both of these findings would support the idea that discouraged borrowers are better informed about their financial institution and their chance of receiving financing.

However, there is evidence that discouraged borrowers don't have a designated account manager; they are 77.3 percent less likely than applicants to have one. It is difficult to reconcile the fact that discouraged borrowers are satisfied with their relationship with their account manager, while they generally do not have a designated account manager. One possible explanation is that discouraged borrowers have not yet borrowed from their financial institution. It could be that the banking relationship is mostly based on savings or current account as suggested by Cole, Goldberg and White (2004), and



that generally no account manager is designated for savers. The reported satisfaction would apply to bank employees with whom they have dealt.

## *2. Characteristics of the Firm*

Discouraged borrowers are 96 percent more likely to report financing as an obstacle to growth compared to applicants (Table 2: I, III). We find no evidence through the financial ratio that discouraged borrowers are more risky than applicants. Only the number of employees and sales could indicate that discouraged borrowers are probably riskier due to their small size. Differences in size could also affect the application cost. As a matter of fact, bigger SMEs are likelier to have personnel who specialize in dealing with financial institutions. Consequently, it is cheaper for these bigger SMEs to apply for financing, and they generally have higher approval rates.

## *3. Characteristics of the Owner*

Contrary to Cavaluzzo et al. (2002), we find no evidence of differences for immigrants or visible minorities. This result could be due to different attitudes concerning different kinds of immigrants or visible minorities. Indeed, Cavaluzzo et al. (2002) find positive and negative coefficients for different ethnic groups, so our variable could capture both the positive and negative impact, and therefore not be significant.

**Table 2: Comparing Discouraged Borrowers with Applicants**

		I	II	III	IV
<b>Satisfaction</b>	Convenience and Accessibility	-0.02 (0.86)		-0.03 (0.83)	-0.00309 (0.98)
	Services Charges	-0.07 (0.50)		-0.06 (0.53)	-0.0908 (0.38)
	Understanding Business	-0.16 (0.21)		-0.16 (0.19)	-0.2373 (0.04) **
	Relation with Account Manager	0.28 (0.01) ***		0.29 (0.01) ***	0.2641 (0.02) **
	Overall Quality	-0.06 (0.72)		-0.09 (0.57)	-0.0576 (0.71)
<b>Relationship</b>	Credit Union (Binary)	0.72 (0.05) **		0.42 (0.21)	0.6660 (0.06) *
	Years of Relationship	-0.03 (0.32)		-0.03 (0.31)	-0.0306 (0.12)
	Designated Manager (Binary)	-0.99 (0.00) ***		-0.91 (0.00) ***	-0.9341 (0.00) ***
<b>Problems</b>	Financing (Binary)	0.60 (0.09) *		0.59 (0.08) *	
	Management (Binary)	-0.52 (0.25)		-0.53 (0.22)	
	Profitability (Binary)	0.18 (0.57)		0.24 (0.43)	
<b>Business</b>	Rural (Binary)	-0.44 (0.24)	0.23 (0.54)	-0.45 (0.20)	
	Age of SME	0.11 (0.68)	-0.20 (0.33)	0.14 (0.55)	
	Exporting (Binary)	-0.07 (0.89)		-0.07 (0.89)	
	R & D Investment	0.55 (0.78)		0.66 (0.73)	
	Intent to Grow (Binary)	0.29 (0.41)	0.24 (0.51)	0.27 (0.42)	
	Full Time Equivalent	-0.63 (0.00) ***		-0.64 (0.00) ***	-0.60 (0.00) ***
	Return on Asset		-0.08 (0.58)		
	Current Ratio		0.01 (0.77)		
	Interest Coverage		0.05 (0.38)		
	Sales		0.00 (0.00) ***		
<b>Owner</b>	Experience (Years)	-0.02 (0.55)			
	Age (Years)	0.01 (0.64)			
	Disability (Binary)	-0.49 (0.56)			
	Immigrant (Binary)	0.01 (0.99)			
	Aboriginal (Binary)	-0.86 (0.47)			
	Visible Minority (Binary)	0.03 (0.95)			
	Region Sector	Yes Yes	Yes Yes	Yes Yes	No Yes
	<i>R Square</i>	0.109	0.062	0.1	0.097
	<i>Hosmer-Lemeshow</i>	0.152	0.924	0.892	0.382
	<i>Likelihood Ratio</i>	89.85	5.57	81.37	79.6
	<i>N</i>	773	872	773	773

Note: The logistic regressions model the probability of being a discouraged borrower (=1) from a sample of discouraged borrowers and those who applied for any form of financing (=0). Omitted variables are identified in Table 1. The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

***b) Discouraged versus Denied and Approved Borrowers***

Han et al. (2009) argue that discouraged borrowers are generally riskier than applicants. Since 81 percent of applicants are approved for financing (Industry Canada, 2006 p.10), the comparison between applicants and discouraged borrower is really a comparison between approved borrowers and discouraged borrowers. The comparison between discouraged and denied borrowers is, however, more interesting, because we can determine what pushed denied borrowers into applying. The results of this analysis follow.

*1. Relationship with the Financial Institution*

As in the comparison between applicants and discouraged borrowers, we find that discouraged borrowers are more likely than denied borrowers to be satisfied with their relationship with their account managers, and to deal with a credit union (Table 3: I, III and IV). Interestingly, the magnitude of the coefficient for satisfaction when comparing denied and discouraged borrowers (-0.31) is greater than the one when comparing approved and discouraged ones (-0.28). In the case of credit unions, the coefficient is always stronger and more significant between denied and discouraged borrower (-0.91) than between approved and discouraged borrowers (-0.65). These results support the idea that discouraged borrowers are generally better informed than both groups, but that the gap is greater with denied borrowers as suggested by Table 1. As in the comparison with applicants, denied SMEs are 70 percent more likely to have a designated account manager. The same possible explanations as in the previous comparison apply.

Surprisingly, the satisfaction coefficients are not significantly different between denied and approved borrowers, except for the variable “understanding business needs.” One could have expected more satisfaction on the side of approved borrowers, because they did receive some financing, but it is not the case (Table 4). This interesting result shows that the differences in satisfaction are not related with the present financing decision of the financial institution, but are rather an evaluation of the long-term quality of the relationship.

Finally, the lack of significance of the satisfaction variables relating to convenience and service charges shows that the application cost does not seem to play a role in the discouragement process contrarily to Kon and Storey (2003).

## *2. Characteristics of the Firm*

Interestingly, denied borrowers do not identify more financing difficulties as obstacle to growth than discouraged borrowers do. This variable could proxy for risk, showing that both kinds of SMEs have a similar level of risk. We find no significant differences between financial variables.

**Table 3: Comparing Discouraged and Denied Borrowers**

		I	II	III	IV
<b>Satisfaction</b>	Convenience and Accessibility	-0.03 (0.85)		0.00 (0.99)	-0.01 (0.93)
	Services Charges	-0.16 (0.23)		-0.13 (0.32)	-0.13 (0.29)
	Understanding Business	0.00 (0.99)		-0.04 (0.75)	-0.09 (0.46)
	Relation with Account Manager	0.29 ** (0.03)		0.30 ** (0.02)	0.29 ** (0.02)
	Overall Quality	-0.14 (0.41)		-0.14 (0.40)	-0.11 (0.48)
<b>Relationship</b>	Credit Union	0.92 * (0.07)		0.81 (0.08)	0.83 * (0.06)
	Years of Relationship	-0.03 (0.38)		-0.02 (0.59)	-0.02 (0.44)
	Designated Manager	-1.01 *** (0.01)		-1.05 *** (0.00)	-1.04 *** (0.00)
<b>Problems</b>	Financing	-0.13 (0.78)		0.00 (0.99)	
	Management	-0.57 (0.29)		-0.44 (0.39)	
	Profitability	0.62 (0.13)		0.44 (0.21)	
<b>Business</b>	Rural (Binary)	-0.15 (0.76)	0.58 (0.24)	-0.20 (0.65)	
	Log Age of SME	0.30 (0.45)		0.05 (0.86)	
	Exporting (Binary)	-0.05 (0.94)		-0.26 (0.61)	
	R & D Investment	1.61 (0.53)		0.12 (0.96)	
	Intent to Grow (Binary)	0.45 (0.34)	-0.27 (0.57)	0.51 (0.26)	
	Log Full-Time Equivalent	-0.74 *** (0.00)		-0.56 *** (0.00)	-0.51 *** (0.00)
	Return on Asset		-0.07 (0.76)		
	Current Ratio		0.09 (0.11)		
	Interest Coverage		0.04 (0.57)		
	Sales		0.00 * (0.09)		
<b>Owner</b>	Experience (Years)	-0.01 (0.82)			
	Age (Years)	0.00 (0.97)			
	Disability (Binary)	-1.13 (0.25)			
	Immigrant (Binary)	1.91 (0.25)			
	Aboriginal (Binary)	-0.78 (0.59)			
	Visible Minority (Binary)	-0.13 (0.84)			
	Region	Yes	Yes	Yes	Yes
	Sector	Yes	Yes	No	Yes
	<i>R Square</i>	0.236	0.208	0.185	0.168
	<i>Hosmer-Lemeshow</i>	0.012	0.388	0.221	0.56
	<i>Likelihood Ratio</i>	59.91	39.68	45.36	40.85
	<i>N</i>	222	170	222	222

Note: The logistic regressions model the probability of being a discouraged borrower (=1) from a sample of discouraged borrowers and those who applied for any form of financing (=0). Omitted variables are identified in Table 1. The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

**Table 4: Comparing Discouraged to Denied and Approved Borrowers**

		I		II	
		Denied	Approved	Denied	Approved
<b>Satisfaction</b>	Convenience and Accessibility	0.02 (0.92)	0.06 (0.65)	0.03 (0.86)	0.06 (0.66)
	Services Charges	0.09 (0.47)	0.01 (0.92)	0.10 (0.43)	0.02 (0.86)
	Understanding Business	0.02 (0.88)	0.21 (0.12)	0.00 (0.99)	0.22 * (0.09)
	Relation with Account Manager	-0.31 ** (0.01)	-0.28 (0.02)	-0.31 *** (0.01)	-0.28 ** (0.02)
	Overall Quality	0.12 (0.52)	0.04 (0.81)	0.13 (0.48)	0.03 (0.87)
<b>Relationship</b>	Credit Union	-0.91 ** (0.03)	-0.65 * (0.09)	-0.86 ** (0.04)	-0.62 * (0.10)
	Years of Relationship	0.03 (0.33)	0.04 (0.16)	0.03 (0.28)	0.04 (0.18)
	Designated Manager	1.14 *** (0.00)	1.07 *** (0.00)	1.13 *** (0.00)	1.08 *** (0.00)
<b>Problems</b>	Financing	-0.16 (0.70)	-0.86 ** (0.02)	-0.17 (0.67)	-0.83 ** (0.02)
	Management	0.51 (0.29)	0.28 (0.54)	0.45 (0.35)	0.24 (0.59)
	Profitability	-0.09 (0.81)	-0.10 (0.76)	-0.09 (0.80)	-0.10 (0.78)
<b>Business</b>	Rural (Binary)	0.36 (0.39)	0.70 * (0.07)	0.33 (0.42)	0.70 * (0.06)
	Log Age of SME	0.00 (0.84)	-0.01 (0.78)	0.00 (0.99)	-0.01 (0.74)
	Exporting (Binary)	0.11 (0.84)	0.05 (0.92)	0.12 (0.82)	0.12 (0.81)
	R & D Investment	-0.07 (0.70)	0.04 (0.82)	-0.08 (0.67)	0.04 (0.82)
	Intent to Grow (Binary)	-0.28 (0.48)	0.39 (0.29)	-0.33 (0.40)	-0.37 (0.31)
	Long Full-Time Equivalent	0.08 *** (0.01)	0.09 *** (0.01)	0.08 *** (0.01)	0.09 *** (0.01)
<b>Owner</b>	Experience (Years)	0.01 (0.70)	0.01 (0.80)		
	Age (Years)	0.01 (0.56)	-0.01 (0.50)		
	Disability (Binary)	0.64 (0.49)	0.42 (0.64)		
	Immigrant (Binary)	-0.70 (0.65)	0.72 (0.54)		
	Aboriginal (Binary)	0.09 (0.94)	1.30 (0.29)		
	Visible Minority (Binary)	-0.11 (0.85)	-0.09 (0.86)		
<b>Region Sector</b>		Yes Yes		Yes Yes	
	<i>N</i>	774		774	

Note: The multinomial logistic regressions model compares denied and approved borrowers to discouraged borrower. The levels of significance are defined in the following way: \*\*\* corresponds to 1%, \*\* corresponds to 5% and \* corresponds to 10%.

## **VI. Conclusion**

This paper investigates problems relating to borrowers who do not apply for financing because of their fear of being refused — so-called discouraged borrowers. We find evidence that these businesses are riskier than those that apply for financing, because they have more financing problems and are generally smaller. In that sense, we give some support to the self-rationing process introduced by Han et al. (2009). This support is however very limited because our financial information is very scant. Furthermore, discouraged borrowers seem to have a better relationship with their financial institution, because they deal mostly with institutions specialized in relationship lending, namely credit unions. Discouraged borrowers were more satisfied than both denied borrowers and applicants. Through this relationship, discouraged borrowers would have gathered better information on themselves and on their financial institution, making them more realistic borrowers. Consequently, their decision not to apply for financing is probably rational and efficient.

These results affect policy-making inasmuch as discouraged borrowers should not be considered a target group for policy. We find no evidence that they are a victimized group, but rather a well-informed one that knows when to try and when to refrain.

This paper is the first to argue that discouraged borrowers are better informed than those who were denied financing. It is therefore important to test this hypothesis using other surveys that contain similar information on the banking relationship. It would also be interesting to ask SMEs about their expectations concerning their loan approval. The lack of knowledge of the bank has been discussed in detail in the information asymmetry literature, but the lack of knowledge of the SME about itself and its financial institution has, to our knowledge, not been studied. This potential field of research is very interesting, because it complements research pertaining to the role of optimism in entrepreneurial activities (e.g., Camerer and Lovallo [1999] and Landier and Thesmar [2009]). More research in that field is necessary to understand the micro-structure of the credit application decision.

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