OBSTACLES TO FINANCING FACING MICRO, SMALL, AND MEDIUM-SIZED FIRMS IN SURINAME

A study from a small-state perspective

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Financieringsobstakels voor micro, kleine en middelgrote bedrijven in Suriname

Een studie vanuit een “small-state” perspectief

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To my family

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Preface

Motivations

The completion of the Ph.D. program at the International Institute of Social Studies – part of Erasmus University Rotterdam – is a milestone in my lifelong learning journey. My motivation in producing a doctorate thesis was threefold. First, on a personal level, my dream was to pursue a Ph.D. program at a renowned international university, as this would enhance my intellectual profile and set a high education bar for my family and fellow researchers. Second, on a professional level, it would capacitate me adequately to add value to policy formulation and implementation at the Central Bank of Suriname – my employer – and beyond. Third, on a societal level, I would be better equipped to carry out rigorous studies and to promote and accelerate research projects.

Various reasons have influenced my decision to research the issue of obstacles to financing faced by micro, small, and medium-sized firms (MSMEs) in Suriname. First, there are indications that such obstacles suppress the growth potential of firms and, subsequently, the economic growth of Suriname. Second, access to credit is not included in the actual policies of the Central Bank of Suriname, whereas, in my view, the bank could play a pivotal role in identifying, assessing, and alleviating access-to-credit obstacles within its mandate as the country's chief monetary and financial authority. Moreover, in general, there is a lack of systematic knowledge building and statistical evidence on this topic at the Central Bank of Suriname. Furthermore, I was also aiming at mastering methods and techniques to execute micro-level studies. Finally, from a scientific point of view, I wanted to contribute to the literature on the obstacles to financing facing MSMEs in small states, given the scant literature and its relevance for Suriname as a small state.

With the benefit of hindsight, I must admit that it would have been better to graduate much earlier in my career. After all, combining a Ph.D. study with an already heavy load of work and family responsibilities is quite demanding – the more so because the workload increased rapidly over time. At the beginning of the Ph.D. program, I was assigned as an advisor to the Executive Board of Directors at the International Monetary Fund (IMF) in 2013. During this period, I was also involved in issues concerning the relationship between Suriname and the

World Bank. After two years at the IMF, I returned to the Central Bank of Suriname and was promoted as Coordinator of its Monetary and Economic Affairs Directorate in August 2015. In March 2019, I was appointed as a Deputy Governor. Even so, reaching the end of the road, I am pleased with the completion of the Ph.D. program.

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- My aunts and uncles for all their support since my childhood – as I grew up between them.
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I am thankful to the Almighty Allah for all His blessings.

William M.M. Orie

Paramaribo, November 1, 2020

Acronyms

ADB	Asian Development Bank
AFI	Alliance for Financial Inclusion
AML	Anti-Money Laundering
CARICOM	Caribbean Community
CBvS	Centrale Bank van Suriname
CFT	Combating the Financing of Terrorism
CGS	Credit-Guarantee Scheme
DTF	Distance-To-Frontier
EAC	East African Community
FinTech	Financial Technology
FIRST Initiative	The Financial Sector Reform and Strengthening Initiative
GBS	General Bureau of Statistics
GCI	Global Competitiveness Index
GDP	Gross Domestic Product
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
LACES	Latin American and Caribbean Enterprise Surveys
MSMEs	Micro, Small, and Medium-Sized Enterprises
NOB	National Development Bank
OECD	Organisation for Economic Co-operation and Development
PROTEqIN	PROductivity, TEchnology, and Innovation
SMEs	Small and Medium-Sized Enterprises

WB	World Bank
WBES	World Bank Enterprise Survey
WEF	World Economic Forum
WEO	World Economic Outlook

Abstract

Obstacles to Financing facing Micro, Small, and Medium-Sized Firms in Suriname

A study from a small-state perspective

This study investigates the extent and nature of the obstacles to financing faced by micro, small, and medium-sized firms (MSMEs) in Suriname, and does so from a small-state perspective. It is motivated by the sheer lack of studies on this topic for Suriname, while there are indications that obstacles to financing suppress the growth of MSMEs. Moreover, despite a rich existing literature on such obstacles with regard to MSMEs, the small-state perspective remains under-researched – as does the issue of potential determinants of obstacles to financing such as ethnicity, religion, and networks. Finally, micro firms have been excluded from the available international surveys on Suriname, while this category of firms actually has the largest share of Suriname's firm population.

Theoretical explanations of access to external finance are centered on information asymmetry and transaction costs from a supply-side perspective. However, I argue that information asymmetry and transaction costs could also hamper access to finance from the demand side of the credit market. Additionally, factors such as ethnicity, religion, networks, gender, and education could inhibit access to finance for MSMEs.

Small developing states have distinctive characteristics rooted in their size or their relatively small markets. These include small scale and capacity constraints, macroeconomic volatility, a thin economic base and limited competition, weak credit-market infrastructure, information opacity, and high costs. These specific characteristics, in turn, affect access to financing for MSMEs.

Based on pooled data from six Caribbean developing small states, including Suriname, I conclude that firms operating in the manufacturing sector, younger firms, women-led firms,

and firms without audited financial statements experience more obstacles to financing than their respective counterparts.

As part of this research, a unique firm-level survey was conducted in Paramaribo, the capital of Suriname and the center of the country's economy. The results indicate that MSMEs mainly use internal financial resources, commercial banks and private capital to finance their working and investment capital. Commercial banks are the most important source of external financing for firms in the country. Around 53 percent of the surveyed firms experienced access to financing as an obstacle to their current operations to some extent.

A probit-model estimation reveals that firms in the manufacturing, construction, and trade sectors are more likely to experience such obstacles than those in the services sector. It also confirms that the age of a firm, its legal status, ethnicity (Creole, Indian, Javanese, and Mixed relative to Chinese), religion (Muslim relative to Christian), and participation in networks are significant determinants of obstacles to financing in Paramaribo.

A unique survey was also conducted among Surinamese banks, which shows that banks face the following obstacles in providing credit to MSMEs: macroeconomic instability, stringent regulations, weaknesses in the information, contractual and enforcement framework, bank-specific factors, and MSME-specific factors.

Firms as well as banks deem the following government interventions to have a significant impact on access to finance: the introduction of business-support centers; a credit-registry bureau; a pledge registry for movable and immovable assets; credit-guarantee funds; reform of the collateral framework to allow for movable collateral; and financial education.

This study makes several crucial contributions to the literature on small developing states regarding obstacles to financing faced by MSMEs. It is the first quantitative study on such obstacles in Suriname, and is primarily conducted from a small-state perspective. I also surveyed the demand as well as the supply side of the credit market in order to prevent biased findings. Finally, the study provides new evidence that ethnicity, religion, and networks are determinants of obstacles to financing for MSMEs.

Samenvatting

Financieringsobstakels voor Micro, Kleine en Middelgrote Bedrijven in Suriname

Een studie vanuit een “small-state” perspectief

In deze studie is onderzoek gedaan naar de omvang en aard van financieringsobstakels waarmee micro-, kleine en middelgrote bedrijven (MKM-bedrijven) in Suriname worden geconfronteerd, en wel vanuit een small-state perspectief. De studie is (mede) ingegeven door het ontbreken van studies over dit onderwerp voor Suriname, terwijl er aanwijzingen zijn dat financieringsobstakels de groei van deze categorie bedrijven beperken. Ondanks uitgebreide literatuur over het onderwerp, is het vraagstuk onvoldoende onderzocht vanuit een small-state perspectief, evenals andere determinanten van financieringsobstakels, zoals etniciteit, religie en netwerken. Daarenboven is geen aandacht besteed aan microbedrijven in Suriname in de beschikbare internationale enquêtes over Suriname, terwijl deze categorie bedrijven feitelijk het grootste aandeel heeft in de Surinaamse bedrijvenpopulatie. Deze bedrijven worden in mijn onderzoek wel meegenomen.

Theoretische verklaringen over de toegang tot externe financiering zijn gericht op informatie-asymmetrie en transactiekosten vanuit een aanbodzijdeperspectief. Ik betoog dat informatie-asymmetrie en transactiekosten ook de toegang tot financiering aan de vraagzijde van de kredietmarkt beïnvloeden. Bovendien kunnen factoren, zoals etniciteit, religie, netwerken, gender en opleiding, ook de toegang tot financiering voor MKM-bedrijven belemmeren.

Small states hebben unieke kenmerken die zijn geworteld in hun omvang en hun relatief kleine markten. Deze omvatten kleinschaligheid van de markt en capaciteitsbeperkingen, macro-economische volatiliteit, een smalle economische basis en beperkte concurrentie, zwakke kredietmarktinfrastructuur, ondoorzichtigheid van informatie en hoge kosten. Deze specifieke kenmerken hebben op hun beurt invloed op de toegang tot financiering voor MKM-bedrijven.

Op basis van datapooling van zes kleine Caribische staten, waaronder Suriname, concludeer ik dat bedrijven die actief zijn in de industriële sector, jongere bedrijven, door vrouwen geleide bedrijven en bedrijven zonder gecontroleerde financiële jaarrekeningen, meer financieringsobstakels ervaren dan hun respectievelijke tegenhangers.

In het kader van dit onderzoek is een unieke enquête op bedrijfsniveau uitgevoerd in Paramaribo, de hoofdstad van Suriname en het centrum van de economie van het land. De resultaten geven aan dat MKM-bedrijven voornamelijk interne financiële middelen, commerciële banken en privékapitaal gebruiken om hun werk- en investeringskapitaal te financieren. Commerciële banken zijn de belangrijkste bron van externe financiering voor bedrijven in het land. Ongeveer 53 procent van de ondervraagde bedrijven gaf aan dat de toegang tot financiering tot op zekere hoogte een belemmering is voor hun bedrijfsactiviteiten.

Een schatting van een Probitmodel laat zien dat bedrijven in de industriële, constructie- en handelssector meer financieringsobstakels ervaren in vergelijking met bedrijven in de dienstensector. Ook kwam naar voren dat de leeftijd van een bedrijf, de juridische status, etniciteit (Creools, Indisch, Javaans en gemengd in vergelijking met Chinees), religie (Moslims in vergelijking met Christenen) en deelname aan netwerken belangrijke bepalende factoren zijn van financieringsobstakels voor MKM-bedrijven in Paramaribo.

Bij de Surinaamse banken is ook een unieke enquête uitgevoerd, waaruit blijkt dat banken te maken hebben met de volgende obstakels bij het verstrekken van krediet aan MKM-bedrijven: macro-economische instabiliteit, stringente regelgeving, zwaktes in het informatie-, contractueel- en handhavingsraamwerk, bank-specifieke factoren en MKM-bedrijven specifieke factoren.

Zowel MKM-bedrijven als banken achten de volgende overheidsinterventies aanzienlijke invloed te hebben op de toegang tot financiering: de introductie van centra voor bedrijfsondersteuning; kredietregistratiebureau's; pandregister voor roerende en onroerende goederen; kredietgarantiefondsen; hervorming van het onderpand raamwerk om zekerheden op roerende goederen mogelijk te maken; en financiële educatie.

Dit onderzoek levert diverse cruciale bijdragen aan de literatuur over financieringsobstakels voor MKM-bedrijven in small states. Dit is het eerste kwantitatief onderzoek naar financieringsobstakels in Suriname en is voornamelijk uitgevoerd vanuit het perspectief van een small state. Ook is zowel de vraag- als aanbodzijde van de kredietmarkt onderzocht om eenzijdige bevindingen te voorkomen. Ten slotte levert deze studie nieuw bewijs dat etniciteit, religie en netwerken bepalende factoren zijn van financieringsobstakels voor de MKM-bedrijven.

Chapter 1: Introduction

1.1 Problem statement

"Access to capital is important for all firms, but it's particularly vital for startups and young firms, which often lack a sufficient stream of earnings to increase employment and internally finance capital spending" (Janet Yellen, n.d)

"Finance is the life-blood of any firm and no firm, no matter how well managed, can survive without enough funds for working capital, fixed assets investment and employment of skilled workers" (Machirori and Fatoki, 2013, p. 97, paraphrasing Agnew, 2003).

In line with both the above quotes, a growing body of literature points towards the merits for private firms of access to external finance. Firms need working capital to sustain production and investment capital to expand it. These types of capital can be financed either by internal sources – that is, from cash flow and retained earnings – or by external sources, banks or otherwise. When firms experience difficulties with access to external finance, this stagnates production, impedes investments (Mankiw, 1986; Hubbard, 1998) and hampers their growth potential (Beck, Demirguc-Kunt, & Levine, 2005; Beck, Demirguc-Kunt, & Peria 2007; Cole & Sokolyk, 2016; Ferrando & Mulier, 2015; and Gómez, 2018). This is especially true for micro, small, and medium-sized enterprises (MSMEs), which contribute significantly to gross domestic product (GDP) and employment in countries worldwide. Hence, this study's focus on MSMEs.

MSMEs represent about 90 percent of businesses and account for more than 50 percent of employment worldwide. By 2030 an estimated 600 million jobs will be needed just to absorb the growing global workforce, which makes the development of such firms a high priority for many governments around the world. Statistics such as these serve especially as a wakeup call for governments in emerging markets and developing countries, where MSMEs report higher obstacles to accessing finance than in the developed world. The International Finance Corporation (IFC) has estimated that MSMEs in developing countries have an unmet financing need of US$ 5.2 trillion every year, equivalent to 1.4 times the current level of global MSME lending (World Bank, n.d.).

Given the aforementioned vital role of MSMEs, both currently and in the future, a thorough investigation into the extent and nature of the financing obstacles facing them will be pivotal in formulating policies aimed at enhancing their access to finance.

The current literature is almost silent on the topic of obstacles to financing viewed from a small-state perspective. Small states suffer – among other things – from diseconomies of scale and macroeconomic volatility, which affect economic outcomes (Read, 2001; International Monetary Fund [IMF], 2013, 2014, 2017). However, while the characteristics of small states and their impact on economic growth are well documented, their influence on access to finance is under-researched. Consequently, findings and policy recommendations emanating from cross-country studies on obstacles to financing may not resonate with the particular circumstances of such states. As Suriname, the focus of this study, is one such small state, we include the impact of the inherent characteristics of small states in our explanation of the finance-related obstacles facing firms in order to fill this gap.

The literature on the obstacles to financing facing MSMEs also departs from the premise that private firms are inherently growth oriented and, furthermore, that the natural path for firms is to graduate from micro, to small, to medium, and finally to large scale. Berner, Gómez, and Knorringa (2008) point to "survival entrepreneurs" within the micro-firms category that are neither growth oriented nor follow this supposedly natural trajectory. Survival entrepreneurs start their businesses not to make a profit but due to a failure to secure wage employment. They focus on increasing their economic security and smoothing their consumption instead of on maximizing profit, and these survival firms operate more or less exclusively in the informal economy. This perspective on micro firms is especially important, as it has consequences for the definition and measurement of financing obstacles as well as for policy prescriptions.

In Suriname, the overwhelming majority of private firms fall into the micro and small categories, and available studies show them facing significant obstacles in accessing external finance. In a study undertaken at the behest of the Surinamese Government, Drum (2012) identified several supply-side and demand-side impediments to credit access experienced by small and medium-sized firms (SMEs) in the country. These financial obstacles were found to be due to a number of factors: a heavy reliance on collateralized borrowing, with real estate

constituting almost the only type of collateral accepted by lenders; insufficient sharing of credit information; a bias in commercial bank lending in favor of larger borrowers; and insufficient financial-reporting regulations and practices.

More generally, the World Economic Forum (WEF) (2011–2015) and the World Bank (2010–2015) have reported in their perception-based annual surveys that entrepreneurs cite problems with access to credit as one of the main obstacles to doing business in Suriname. More recently, the World Bank Enterprise Survey (WBES) for 2018 concluded that firms experience difficulties in accessing finance as the most critical such obstacle in the country.

Surprisingly, most – if not all – studies on this topic in Suriname are based on qualitative findings and anecdotal evidence. There is no study covering the determinants of obstacles to financing in the country, and the perspective of small states and micro firms is absent from these analyses. The few studies that have been conducted on obstacles to financing in Suriname have done so either from the demand or from the supply side of the credit market – an approach that could lead to biased findings. By surveying firms as well as banks, we try to overcome such weaknesses. Through triangulation, we aim to better identify the obstacles to financing facing MSMEs in Suriname.

Against a backdrop of the merits for firms of access to funding, the alleged finance-access difficulties in Suriname and the shortcomings of the available studies, we define the central problem of this study as follows: **the extent and nature of obstacles to financing for MSMEs in Suriname.**

In the remainder of this chapter, we explain the objectives of this study and define the relevant obstacles to financing. We then present the theoretical perspectives on such obstacles that will be elaborated further in the next chapter. This is followed by a review of the methodology, relevance, and structure of the study.

1.2 Objectives

The main objective of this study is to explore the extent and nature of obstacles to financing facing MSMEs in Suriname from a small-state perspective and from a firm as well a banking perspective, and to formulate policy recommendations. To address the main objective, we formulate six sub-objectives.

First, we explore the nature of financing obstacles for MSMEs in the literature, from a small-state perspective (Chapters 2 and 3). This approach is necessary, as Suriname – the main focus of the study – is one such small state. Furthermore, small states have peculiar characteristics shaping access to finance by their MSMEs, which are under-researched. Accordingly, the standard policy recommendation for enhancing access to finance for MSMEs – namely, upgrading the operational environment – is too generic: it does not take the peculiarities of small states into account. The literature study will guide the empirical studies, including the setup of questionnaires and models.

Second, we identify the determinants of obstacles to accessing external finance by MSMEs in the Caribbean (Chapter 4). Suriname is a member of the Caribbean Community (CARICOM) and shares many small-state characteristics with its neighbors. CARICOM is a regional economic bloc of 15 Caribbean states, currently in the process of forming a single market; its constituent countries have more or less the same economic structures – small and undiversified – and share historical and cultural backgrounds. This study will provide input for setting up of a model for Suriname.

Third, we estimate the extent of obstacles to external financing encountered by MSMEs in Suriname across firms' characteristics, in order to formulate specific policy recommendations (Chapter 5).

Fourth, we identify the determinants of access to external finance by MSMEs in Suriname based on a unique firm-level survey (Chapter 5).

Fifth, we conduct a qualitative investigation into financing obstacles facing MSMEs in Suriname through a unique bank-level survey (Chapter 6).

Finally, we formulate policy recommendations based on the findings in the literature and those from the firm- and bank-level investigations, taking into account the context of the small state of Suriname (Chapter 7).

1.3 Literature review

1.3.1 Definition of obstacles to financing

Throughout this research, the concept of an obstacle to financing will be used interchangeably with that of an access-to-finance problem. Despite a vibrant research agenda worldwide on access to finance, a unified definition of the phenomenon is still lacking (Kumar & Francisco, 2006; Boucher, Guirkinger, & Trivelli, 2009; Claessens & Sakho, 2013).

The first problem encountered is the absence of consensus on which firms have access to finance. It is tempting to conclude that firms with credit from financial institutions have access to the financial system and, therefore, do not face financing obstacles. However, this is incorrect. While usage relates to the actual consumption of financial services – in this case, being in possession of a loan – access concerns the availability or supply of quality financial services at "reasonable cost," with a focus on whether an investment is constrained or not (Claessens & Sakho, 2013).

However, the operationalization of "quality services" and "reasonable costs" may dictate the measurement of access to finance. Therefore, the category "non-users" should differentiate between voluntary and non-voluntary exclusion. The voluntary-exclusion group may not need or seek external finance because of the availability of internal funding or due to other reasons such as religion. The study of obstacles to financing should, then, be focused on the non-voluntary category. Cole and Sokolyk (2016) refine the distinctions between firms and propose the following categories: non-borrowers, discouraged borrowers, denied borrowers, and successful borrowers. A discouraged borrower is someone who is not willing to apply for a loan because of the fear of rejection, given their prior experience with the refusal of loan applications.

The second problem lies in the dimensions of access to finance. Access to finance is not only about the demand for credit and the successful obtaining of that credit. Claessens (2006) argues that it also has other dimensions, such as the period in which the credit is obtained, the type of credit, the ease with which it is obtained, and repetition of the use of credit. Furthermore, firms obtain various forms of external financing – among them, short-term trade finance, working-capital financing, and investment financing. Each of these forms may

bring with it different degrees of financing constraints – for example, a firm might be unconstrained in trade finance but may not be able to obtain investment financing. Therefore, even firms that have obtained funding may face financing obstacles.

Following Beck, Demirguc-Kunt, Laeven, and Maksimovic (2006), we use direct reporting by firms to assess whether they experience access to finance as an obstacle to their growth. In line with Beck et al. (2006), we refer to self-reported, unaudited financing constraints as obstacles to financing.

1.3.2 Theoretical perspectives on obstacles to financing

Information asymmetry and agency problems constitute the prevailing theoretical explanations for obstacles to financing encountered by MSMEs (Han, Fraser, & Storey, 2009; Djankov, McLiesh, & Shleifer, 2007; and Poncet, Steingress, & Vandenbussche, 2010). Market failure based on information asymmetry occurs when information is unevenly distributed among finance providers and recipients of finance, and when risk and uncertainty exist regarding present and future trading conditions (Tucker & Lean, 2001).

The literature mostly addresses the existence of information asymmetry from a supply perspective. Stiglitz and Weiss (1981), for example, note that banks as finance providers have incomplete information regarding the underlying quality of projects and the management of firms. This gives rise to the problem of adverse selection. Consequently, providers can reject good lending prospects while poor prospects are accepted.

However, information asymmetry could hinder the conversion of potential credit demand to effective credit demand by firms with profitable projects. This perspective has received little attention in the literature. In response to information problems, banks often require collateral. This reduces the probability of failure and addresses the moral hazard (Hoff & Stiglitz, 1990). On the other hand, Boucher, Guirkinger, and Trivelli (2009) argue that the increase in demand for collateral from financial institutions results in entrepreneurs bearing high contractual risk. In this scenario, business owners have enough collateral but are not willing to take the risk related to that collateral and, therefore, do not convert their potential demand into effective demand. Apart from the risk side, Berger, Espinosa-Vega, Frame, and Miller (2011), along with Steijvers, Voordeckers, and Vanhoof (2008), also stress the emotional risk related to the use

of collateral. Transaction costs related to collateral also hinder the conversion of potential credit demand into effective credit demand (Boucher et al., 2009; De Guia Abiad; 1993; Kavanamur 1994; and Masuko & Marufu, 2003).

Social networks are also considered an essential factor in the concept of an obstacle to financing. Despite its importance, relatively little research has been conducted in this field. In general, social networks transcend institutionalized rules and formal prescriptions and are an efficient alternative to either the market or the hierarchy encountered in economic transactions, as stated by Lew (2013). Lin (1999) recognized four ways in which networks increase access to resources – namely, through information, influence, social credentials, and strengthening identity/recognition.

In developing countries, SMEs get around market failures and the lack of formal institutions by using private governance systems such as ethnically based business networks. Networks help to overcome information asymmetry and weak contract enforcement (Beck & Demirguc-Kunt, 2006).

Empirical studies support the role of networks in facilitating access to finance. For example, Watson (2012) states that the network relationship between firms' managers and a bank contributes to better access to finance. Coleman (1988) finds that networks result in the cost-effective acquisition of information to support decision-making, which would otherwise be costly to obtain. Talavera, Xiong, and Xiong (2012) argue that networks become more relevant in developing and emerging-market countries due to an underdeveloped operating environment, often accompanied by corruption, and because of the lack of human and material resources, poor management, and inefficient judicial systems.

As Suriname is a multi-ethnic and multi-religious society, we will also assess whether ethnicity and religion determine success in accessing finance.

Ethnic networks can facilitate access to finance because of the flow of information and informal enforcement mechanisms, both of which lower transaction costs (Biggs, Raturi, & Srivastava, 2002). However, ethnicity can also be detrimental to access to finance due to discrimination (Howell, 2019).

The literature on religion and access to finance focuses on persons or groups unable or unwilling to access the credit market on religious grounds (Karlan, Osman, & Shammout, 2017; World Bank, 2008). Religion may, for instance, prohibit firms from borrowing at (certain) interest rates or conditions (Karlan et al., 2017). However, as in the case of ethnicity, we argue that religion could also influence access to finance through networks and discrimination.

Despite its Muslim population proportion of 14 percent, Suriname neither had an Islamic bank nor offered Islamic financing products. In December 2017, the first Islamic bank in Suriname (and in Latin America and the Caribbean) was established.

In sum, we will assess the obstacles to financing faced by MSMEs from the demand as well as the supply side of the credit market. We will augment the standard determinants of financial obstacles with a consideration of ethnicity, religion, and networks.

1.4. Methodology

This study has two theoretical and three empirical chapters. Both theoretical chapters are based on a literature study: the first one (Chapter 2) explains in detail the fundamental problem with credit markets; the second (Chapter 3) delves into the specific factors in small states that influence obstacles to financing.

In the first empirical chapter (Chapter 4), which assesses the obstacles to financing encountered by MSMEs in the Caribbean, we use data from the 2010 World Bank Enterprise Survey database for the Caribbean and Latin America. We carry out a robustness check on the findings by estimating the same model using the 2013 Inter-American Development Bank (IDB) PROductivity, TEchnology, and INnovation Survey (PROTEqIN) database for the same Caribbean countries. We use an ordered probit model to assess the determinants of obstacles to financing in the Caribbean.

The World Bank used a stratified random sampling method to select its sample. The objective of the WBES was to obtain enterprises' views on the state of the private sector as well as to help in building a panel of enterprise data that would make it possible to track changes in the business environment over time. Such a database enables impact assessments of policy reforms. Through face-to-face interviews with firms in the manufacturing and services sectors, the survey assesses constraints on private-sector growth. It creates statistically significant

business-environment indicators that are comparable across countries. Questionnaire topics include firm characteristics, gender participation, access to finance, annual sales, costs of inputs/labor, workforce composition, bribery, licensing, infrastructure, trade, crime, competition, land and permits, taxation, informality, business–government relations, innovation and technology, and performance measures (World Bank, 2010).

The PROTEqIN survey was conducted in Barbados, Belize, Jamaica, Guyana, Suriname, Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines, the Bahamas, and Trinidad and Tobago. Its objective was to provide feedback from enterprises that had participated in the previous round of surveys in 2011 and to capture additional information on firm performance; finance; the gender of ownership and management; the use of product-development programs; and issues related to management style, innovation, and crime (Inter-American Development Bank [IDB], 2014).

For the second empirical chapter (Chapter 5), in which we assess the financing obstacles for MSMEs in Suriname, we collect primary data through a unique firm-level survey along the lines of the 2010 WBES, which was conducted in the country between August and November 2011, and the 2013 IDB PROTEqIN. However, we augment both with the kind of specific country characteristics that were overlooked in those surveys, such as those relating to micro firms, ethnicity, religion, and networks. A sample was drawn from the enterprise database of the General Bureau of Statistics covering firms in Paramaribo, the capital city of Suriname. A stratified random-sampling method was used to select the sample. This method is preferable to simple random sampling (as used in World Bank, 2011) for the following reasons:

- It gives unbiased estimates for segments of the population as well as the whole population.
- It avoids concentrating firms within one or two industries/sizes/locations, thereby obtaining more precise estimates (i.e., lower standard errors, other things being equal, and smaller margins of error).
- It reduces the cost per observation by stratifying population elements into convenient groupings.

We use a probit model to assess the determinants of obstacles to financing faced by firms in Suriname.

The third empirical chapter (Chapter 6), which presents the banks' views on obstacles to financing encountered by MSMEs in Suriname, is based on primary data collected through a unique bank-level survey.

1.5. Relevance

This study has scientific, policy, and social relevance.

Scientific relevance

The study contributes to the scant literature on small states with regard to the obstacles to financing faced by MSMEs. Furthermore, it contributes to the MSME literature by assessing those determinants of obstacles to financing that have been overlooked – or, at least, remained less explored – such as ethnicity, religion, and networks.

Policy Relevance

This research comprises the first systematic empirical study in Suriname on the obstacles to financing facing MSMEs. Both the Government and the Central Bank of Suriname have placed improved access to finance high on their respective agendas. The findings of this study could be used as inputs by the Surinamese authorities to design policies aimed at enhancing access to external finance by MSMEs. The standard policy "recipe" for enhancing access to finance is an upgrading of the operating environment; however, this seems too generic and does not take into account the inherent characteristics of small states. By explicitly incorporating the small-state perspective into this study, we aim to reach policy solutions that resonate within the context of the small state.

Social relevance

The ultimate goal of this study is to contribute to enhanced access to external finance by MSMEs in Suriname and, in doing so, to broaden the opportunities for firms there. Those market segments that are currently inadequately served by financing institutions will benefit from improved access to external finance, with positive effects on production, employment, and income.

1.6 Structure

Following this Introduction, in Chapter 2 we focus on theoretical and empirical discussions on obstacles to finance faced by MSMEs in general, and in Suriname in particular. The characteristics of firms and the financing market of the country are also described, which allows for the adaption of theoretical explanations for their use in the Surinamese context. Finally, we identify in Chapter 2 the determinants of access to external finance in the literature, augmented by other potential determinants, and present the building blocks of a probit model to be used in the quantitative empirical chapters.

In Chapter 3, we focus on the issue of obstacles to financing specifically in the context of a small state, as Suriname is one such state.

In Chapter 4, we conduct an initial empirical investigation of obstacles to financing facing SMEs in the Caribbean, based on secondary data collected within the 2010 World Bank Enterprise Survey Initiative for the Caribbean and Latin America. We assess the determinants of obstacles to financing in the Caribbean using an ordered probit model. We repeat the assessment of these determinants by estimating the same model using the 2013 IDB PROTEqIN survey dataset.

In Chapter 5, we present a quantitative analysis of obstacles to financing facing firms in Suriname based on a unique firm-level survey undertaken in the country.

In Chapter 6, we present a qualitative analysis based on a unique bank-level survey conducted in Suriname.

Chapter 7 concludes and presents policy recommendations based on the findings of this study.

Chapter 2: Theoretical and Empirical Findings on Obstacles to External Financing for Firms

With a focus on Micro, Small, and Medium-Sized Firms

2.1 Introduction

The literature espouses two main views on the sources of financing for firms. First, the mainstream, or orthodox, Neoclassicals assume that investments are financed from an efficient stock market or savings. In the latter case, banks play a prominent role in channeling funds from surplus sectors to deficit sectors. The Neoclassicals depart from a competitive market, in which agents have full information, and all sets of markets exist, such as insurance and real estate markets. Banks can distinguish between good and bad projects and charge an interest rate accordingly, clearing the credit market. In their view, financial factors do not play a role in investment decisions as all the required financing could be obtained (Fazzari, Hubbard, & Petersen, 1988).

Second, in contrast to the orthodox Neoclassicals, Keynesians, or heterodox economists, believe that savings and investments comprise different decisions undertaken by different actors. The credit market fails to match up to their objectives. Therefore, very often – and particularly in developing countries – investments are made directly by a firm from its profits. One central argument is that banks are not able to extend investment finance or long-term finance because their funding is primarily of a short-term nature. Nevertheless, Keynesians admit that working capital is being financed by banks or by the curb market. However, in their view, working capital contributes not to firm growth but rather to maintaining production levels. Keynesians propose direct government intervention in supplying long-term financing, preferably through development banks, as, in their view, only this type of financing leads to growth of firms (Fernando, 1997). The Keynesian view on the merits of working capital is weak, however. Fazzari and Petersen (1993) argue that working capital is used by firms to smooth fixed investments. In developing countries, significant production lags require large advances of money for working-capital needs. Since equity and commodity markets are weak, this working capital needs to pay for labor, and intermediate input is funded by credit – either

from the legal banking sector or from an underground curb market (Taylor, 1983). Therefore, we can conclude that the merit of working capital goes beyond maintaining production levels as it could be used as a substitute for investment capital.

Stiglitz and Weiss (1981) successfully attacked the orthodox Neoclassicals' assumption of agents being in possession of full information, and showed that information asymmetry prevails in markets and leads to market failure. In their view, internal and external funds are not perfect substitutes for one another: due to information asymmetry and agency problems, banks charge a premium on external funds, making them more costly than internal funds. Furthermore, banks are not able to distinguish between good and bad projects as the riskiness of any given project is not observable. However, unlike the Keynesians, Stiglitz and Weiss do not propose direct government intervention in the credit market. Instead, they focus on measures to minimize information asymmetry and, by doing so, enhance access to finance.

In the literature, a consensus has emerged on the existence of information asymmetry and its impact on financing constraints faced by firms. Micro, small, and medium-sized firms (MSMEs), especially young ones, are expected to experience a relatively greater level of financing constraints because information is more of an issue for them in comparison with large and older firms (Beck, Demirguc-Kunt, Laeven, & Maksimovic, 2006). These financing constraints in turn hamper the growth potential of these firms.

Prominent in this view is Schumpeter's theory of "creative destruction," which assumes a positive contribution from the credit market (banks) to economic growth. According to this theory, the entry of new innovative companies maintains the dynamics in the economic-growth process, which can lead to the downturn (destruction) of existing companies that do not adapt to the new market conditions. The development of the credit market (the financial system) leads to economic growth because this system feeds the process of "creative destruction" by channeling credits to efficient companies – in particular, efficient new companies (Bertocco, 2008).

Rajan and Zingales (1996) reaffirmed the theory of creative destruction and demonstrated that financial development leads to economic growth because of the reduced costs to dependent companies of using external financial resources. Improved access to the credit market will level the playing field, whereby potentially healthy new companies will be less

affected by obstacles to financing. In addition, financial-sector development should liberate firms from the drudgery of generating funds internally.

The seminal theoretical study by Stiglitz and Weiss (1981) and the seminal empirical study by Fazzari et al. (1998) spurred a large body of empirical studies on the obstacles to external financing facing firms and their impact on growth. The literature has established the fact that access to external finance for firms is vital as obstacles to financing impede investments and hamper firms' growth potential. Consequently, better access to external finance has a positive impact on the growth potential of firms – especially of small and medium-sized enterprises (Beck, Demirguc-Kunt, and Levine, 2005).

We argue that the impact of information asymmetry and related agency problems on access to finance belongs predominantly to a supply-side view. Information difficulties may also hinder firms accessing the credit market through the demand side of that market. Besides information asymmetry, other structural factors hamper access to finance – such as ethnicity, religion, and networks. This focus is under-researched, and will be explored by us.

This chapter aims to discuss theories explaining obstacles to external financing and empirical findings on the obstacles, especially in Suriname. Surveys and studies on Suriname reveal that problems with access to external finance are perceived to be one of the major impediments to the growth of firms (Drum, 2012). Thus, thorough research into the determinants of obstacles to financing is an essential first step in enhancing access to finance.

Furthermore, cross-country studies focus on determinants and obstacles that can be compared across national boundaries, but by doing so they do not fully account for intrinsic country characteristics. The factors of ethnicity, religion, and networks comprise such characteristics. As collateral is a crucial condition in lending, we argue that in a multi-ethnic society, ethnicity may in fact be a determinant of obstacles to financing if assets that are accepted as collateral by financing institutions are unequally distributed among various ethnic groups. This argument applies equally to religious groups. Furthermore, networks seem to play a crucial role facilitating economic transactions, especially in countries with weak information and contractual frameworks. Networks could be instrumental in small states given the closeness between people that forms one of their characteristics. In a multi-ethnic and multi-religious developing small state such as Suriname, ethnicity, religion, and networks

are potential determinants of obstacles to financing, and should be included in surveys and studies on access to finance.

Our study will contribute to the empirical literature on obstacles to financing in a number of ways. Its novelty will lie in the fact that it will include obstacles emanating from the demand side of the credit market as a consequence of information asymmetry, an issue hitherto hardly explored in the literature. Such obstacles included ethnicity, religion, and networks. Furthermore, the study will explicitly include the small-state perspective, which is also under-researched, and the empirical studies will be based on unique firm-level and bank-level surveys.

This chapter is structured as follows: Section 2.2 presents the main theoretical explanations of obstacles to external financing. It is followed by an empirical approach on how to measure financing obstacles in Section 2.3. This chapter concludes with Section 2.4: a review of access-to-finance studies in Suriname.

2.2 The main theoretical explanations of obstacles to external financing

Theoretical explanations of access to external finance are centered on information asymmetry and transaction costs (Han et al., 2009; Djankov et al., 2007). The mainstream explanation is a supply-side view. However, financing obstacles may also emanate from the demand side of the credit market – a factor less explored in the literature. We first present the standard supply-side view on credit rationing, followed by a demand-side view on obstacles.

2.2.1 Information asymmetry and credit rationing: the supply-side view

Stiglitz and Weiss (1981) provide a supply-side explanation for credit rationing based on information asymmetry between borrowers and lenders. In their model, borrowers have private information about the riskiness of their project returns and lenders cannot necessarily distinguish "good borrowers" from "bad borrowers," as the riskiness of their projects is not observable. Given this difficulty, the interest rate that a bank charges may itself affect the riskiness of the pool of loans – either by attracting high-risk borrowers (the adverse-selection effect) or by adversely affecting the actions and incentives of borrowers (the moral-hazard effect). Both effects exist because, even after evaluating loan applications, banks do not have complete information on their borrowers. When the interest rate (price) affects the nature of the transaction, market equilibrium (where demand equals supply) may not occur. Banks making loans are not only concerned about the interest rates that they charge on those loans but also about their riskiness. Therefore, banks may maximize their profits by quantity rationing in competitive equilibrium.

Due to adverse-selection and moral-hazard problems induced by information asymmetry, the expected rate of return to the bank will increase less rapidly than the interest rate and, beyond a point, may decrease – as shown in Figure 2.1. Despite existing demand, the bank will not want to raise the interest rate above the "bank optimal" rate (r^*), at which the expected return to the bank is maximized. The supply of loans is backward-bending at interest rates above r^*.

Figure 2.1: Interest rate and expected rate of return

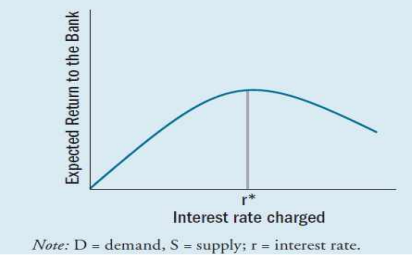
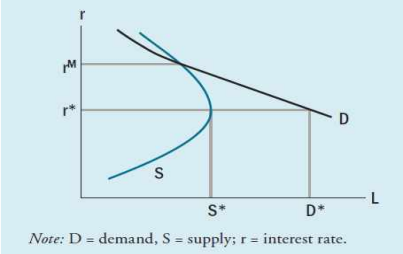


Figure 2.2: Backward-bending credit supply curve



Source: World Bank (2008, pp. 31–32).

Figure 2.2 shows that at *r**, the demand for funds (*D**) exceeds the supply of funds (*S**). In a world without credit rationing, unsuccessful borrowers would offer to pay a higher interest rate until demand equals supply at *rM*. Although supply does not equal demand at rate *r**, it is the equilibrium interest rate. As it is not profitable to increase the interest rate even though the bank faces excess demand for credit, the bank will deny loans to borrowers who are observationally indistinguishable from those who receive loans. The rejected applicants would not receive a loan even if they offer to pay a higher rate. Hence, they are denied access.

Weak developed information and contractual frameworks exacerbate the risks of information asymmetry. The information and contractual frameworks refer to credit registers and the effective contractual enforcement of laws and contracts. Under these circumstances, MSMEs suffer more from financing obstacles than do larger firms due to information issues. Furthermore, financial institutions are reluctant to take on risks. They also tend to shorten the loan maturity if collateral laws are not developed and the enforcement of contacts is weak (Beck et al., 2006; De la Torre, Gozzi, & Schmukler, 2007).

De la Torre et al. (2007) emphasize the fact that even if there were no problems related to information asymmetry, certain firms may still experience access problems due to high transaction costs. This situation occurs if the cost of providing credit exceeds the risk-adjusted fee for the lender. This may be caused by deficiencies in the institutional framework, making it costly to obtain relevant information about a project or borrower in order to monitor the project and enforce the contracts.

Countries in which such deficiencies occur are characterized by the presence of many small businesses, which generally are known to have insufficient information (Tucker & Lean, 2001;

de la Torre et al., 2007). In situations like these, financial institutions likely charge high costs for the screening of credit proposals and the monitoring of credit contracts. These costs are fixed and, therefore, can strain smaller credit recipients due to the relatively high cost per unit of credit.

Financial institutions demand collateral in order to reduce the risk of adverse selection and moral hazard. So the availability of collateral is crucial in accessing the credit market (Besanko & Thakor, 1987; Menkhoff, Neuberger, & Suwanaporn, 2006; Claessens & Tzioumis, 2006; Peachey & Roe, 2004). First, collateral has a signal function. It forces entrepreneurs to express their default risks, and, by doing so, reduces adverse selection. Second, collateral enables financial institutions to sort projects by risk and to assess them – the so-called sorting function. Projects with sufficient collateral are considered good and those with less collateral bad. Financial institutions assume that credit applicants would not be inclined to offer sufficient collateral when, according to their own assessment, the project would not have a sufficient chance of success. Third, collateral has an incentivizing effect – called the disciplinary function – as it forces entrepreneurs into a higher commitment to a project; in other words, they now really do stand to lose something. Moreover, entrepreneurs will be less inclined to use the financing that they have obtained on riskier projects than those initially intended, and therefore collateral decreases the risk of moral hazard (Chan & Kanatas, 1985; Stiglitz & Weiss, 1981; Berger, Espinosa-Vega, Frame, & Miller, 2011).

This supply-side view departs from submitted credit proposals by firms. It assumes that all firms are driven by profit. Furthermore, it neither makes a distinction between informal- and formal-sector firms nor takes the specifics of micro firms, especially survival firms, into account. We could conclude that this theory primarily explains the financing constraints of a specific category of firms – that is, formal-sector firms, and from a certain cut-off point. However, it takes no account of firms that do not demand credit from formal credit institutions.

2.2.2 Information asymmetry and credit rationing: the demand-side view

According to Boucher et al. (2009), information asymmetry leads predominantly to quantity rationing in the standard theory of access to finance. Simply put, this is a financial institution's view. However, Boucher et al. (2009) argue that information asymmetry can lead to three different types of non-price rationing: quantity rationing, transaction costs, and risk rationing. Therefore, an analysis based only on quantity rationing is incomplete. They suggest that the latter two types of rationing occur on the demand side, through the requirement for collateral. In their model, firms that are not willing to convert their potential credit demand into effective credit demand are credit rationed (that is, they face credit obstacles). They assume that an entrepreneur has a choice between two alternatives: first, to finance a profitable project by utilizing their collateral to increase future consumption; second, to lease the collateral and generate an income stream.

Boucher et al. (2009) further argue that the increase in collateral demand by financial institutions results in the entrepreneur's bearing high contractual risk. In this scenario, business owners have enough collateral. However, they are not willing to take the risk related to that collateral and, therefore, do not convert their potential demand into effective demand. They argue that the collateral demand forces entrepreneurs to take certain risks, making their expected utility lower than renting the collateral. While Boucher et al. (2009) underscore the financial side of the collateral risk for the entrepreneur, the literature on single-person and family firms (Berger et al., 2011; Steijvers, Voordeckers, & Vanhoof, 2008) stresses the emotional risk related to the use of collateral. Within such firms, there is no distinction between family and business assets. Collateral, usually real estate, has financial as well as emotional value, they argue.

Therefore, it is likely that entrepreneurs consider not only the financial aspects but also the emotional value of the collateral. So, besides financial risks, the entrepreneur may not be willing to pledge collateral in order to convert potential credit demand into effective demand due to emotional risks. This view of collateral risk is based on the assumption that the entrepreneur is not able to insure the collateral. Complementary markets, such as insurance, are not sufficiently developed or are completely absent in developing countries, which constitutes a genuine problem for those nations.

In addition to risks, transaction costs related to collateral use may also hinder the conversion of potential credit demand into effective credit demand. These costs lower the return on a project, forcing the entrepreneur into an alternative use of the collateral rather than pledging it for obtaining finance. Costs associated with the use of property as collateral may include the costs of documentation and the valuation of assets for the benefit of the bank (Boucher et al., 2009; Kavanamur, 1994). In addition to these direct costs, there are also opportunity costs associated with the time involved in procuring such documents (for example, trips to the mortgage office) (Ahmad, 1989).

De Soto (2000) adds that, especially in developing countries, the problem in lending does not emanate from a lack of collateral but from the absence of property rights of assets to serve as collateral. The lack of an appropriate land title, for instance, prevents an entrepreneur from using it as collateral. De Soto refers to such assets as "dead capital."

Besides information asymmetry and transaction costs, other factors emanating from the demand side of the credit market also hamper access to finance. These include ethnicity (Biggs et al., 2002; Howell, 2019); religion (Karlan et al., 2017; World Bank, 2008); networks (Coleman, 1988; Talavera, Xiong, & Xiong, 2012); gender (Wilson, Carter, Tagg, Shaw, & Lam, 2007; Gamage, 2013); and education (Ogubazghi & Muturi, 2014). Furthermore, most studies on obstacles to finance depart from the conventional wisdom that private firms are profit-maximizing entities and follow a natural path of growth from micro to small and further onwards. Generally, studies do not make the distinction between growth-oriented firms and survival entrepreneurs (see Chapter 1).

In sum, we conclude that information asymmetry and the transactions costs closely related to it hamper access to finance. The quality of the information and contractual framework, and the provision of information by firms, determine the intensity of information asymmetry and transaction costs and, thus, access to finance. Furthermore, in developing countries – especially in small states – information asymmetry and transaction costs are high and strain the credit supply due to weaknesses in the institutional framework and the preponderance of small firms. In the next chapter, we argue that in small developing states the abovementioned challenges are greater because of the peculiar characteristics of such states.

2.3 Empirical approaches

Obstacles to financing have been assessed using direct as well as indirect approaches (Claessens & Sakho, 2013; Boucher et al., 2009). Of course, the choice of a particular approach is motivated by the availability of data and the focus of the study.

2.3.1 Direct measurement

Direct measurement is used by surveys from the demand side of the credit market. Claessens and Sakho (2013) argue that in many developing countries, surveys are the only possibility for measuring obstacles to financing as econometric techniques require more extended series of stock price data and firm-specific information that are generally not available. The existence of a large group of small and medium-sized enterprises, for which it is well known that information is an issue, also dictates the use of surveys.

Beck et al. (2006) argue that assessing obstacles to financing using direct reporting has the merit that the obstacles are directly measured instead of inferred indirectly. However, they argue that firms reporting constraints may not be actually constrained, and therefore they use the term “obstacles” rather than “constraints.” Following Beck et al. (2006), we will use “obstacles” for self-reported constraints.

The World Bank’s Enterprise Survey (WBES – World Bank, n.d.) provides, among other things, indicators on obstacles to finance and financing modalities faced by firms. For example, Enterprise Surveys provide indicators that compare the relative use of various sources with finance investment. Excessive reliance on internal funds is a sign of potentially inefficient financial intermediation. Another set of indicators measures the use of financial markets by individual firms. It presents the percentage of working capital that is financed by sources external to the firm and a measurement of the burden imposed by loan requirements, calculated from collateral levels related to the value of loans. Additional indicators focus on the use of financial services by private firms – both on the credit side, by measuring the percentage of firms with bank loans or lines of credit, and on the deposit-mobilization side, by measuring the percentage of firms with checking or savings accounts.

The World Economic Forum’s (WEF’s) “Executive Opinion Survey” also includes indicators of obstacles to financing. It focuses on the availability and affordability of financial services, ease

of access to loans, and the availability of venture capital. The WEF's ease-of-doing-business ranking in the Global Competitiveness Index (GCI) also indicates the importance of obstacles to financing in the conducting of business.

The WBES and the WEF focus on formal firms. Furthermore, micro firms were not included in their surveys of Suriname. The usefulness of these indicators for assessing the obstacles to financing facing firms are limited to those types of firms covered in the surveys. If, for instance, micro firms have a large share in a country's firm population, the findings of the surveys might be biased.

2.3.2 Indirect measurement

Claessens and Sakho (2013) report two main econometric approaches in the literature to measure financing constraints indirectly: 1) investment-internal cash-flow regressions and 2) Euler equations estimations. These approaches use demand-side data by identifying the demand for sustainable external financing and the sensitivity of investment to the presence of internal funds. Firms facing financing constraints are assumed to have a higher investment–internal funds sensitivity.

The investment–cash flow regression by Fazzari, Hubbard, and Petersen (1988) – henceforth, "FHP" – is based on the "q" theory of investment suggested by Tobin (1969). However, this method also takes into account the existence of imperfect capital markets. As assumed by the Modigliani–Miller theorem (Modigliani & Miller, 1958), in frictionless, perfect capital markets, a firm's financing decisions are independent of its investment decisions because internal and external funds are perfect substitutes for one another. In real life, however, imperfect capital markets exist as information asymmetries, transaction costs, agency costs, and managerial risk aversion are present. Consequently, there is imperfect substitutability between internal and external funds, making the cost of external finance higher than the opportunity cost of internally generated funds. In this context, financial constraints may have a significant (negative) effect on real variables such as investment, working capital, and firm growth – especially for firms with insufficient internal funds (often measured by cash flows and retained earnings).

The investment–cash flow regression of FHP (1988) has the following structure:

Investment–cash flow regressions (Coad, 2010, p. 212 has a summary of types of regressions associated with the different theoretical perspectives)

$$\left(\frac{\mathrm{I}}{\mathrm{K}}\right)_{\mathrm{it}} = \beta \mathrm{q}_{\mathrm{it}} + \gamma\left(\frac{\mathrm{CF}}{\mathrm{K}}\right)_{\mathrm{it}} + \varphi\left(\frac{\mathrm{CF}}{\mathrm{K}}\right)_{\mathrm{it}-1} + \varepsilon_{\mathrm{it}}$$

Equation 1

Where:

- I is the investment from firm i at time t;
- K is fixed assets;
- q is Tobin's "q" used as a measure of investment opportunities (Tobin's marginal q calculated as the ratio of the market value of an additional unit of capital to its replacement cost. q = market value of installed capital/replacement cost of capital);
- CF is cash flow, which is a proxy for internal finance;
- ε is the error term;
- β is expected to be positive, because an increase in the firm's investment opportunity should lead to an increase in that firm's investment;
- the investment in the current year and the current and past cash flows are scaled to fixed assets;
- investment–cash flow sensitivity is captured by "CF/K";
- *i* is the number of firms (1, 2, 3, … N); and
- *t* is the period (1, 2, 3, … T).

FHP typically assume the investments of financially constrained firms to be more sensitive to cash-flow fluctuations than those of (relatively) unconstrained ones. This is because in firms without access to external finance, the relationship between investment and the cash-flow ratio is one-to-one if these firms have excellent investment opportunities and, hence, retain all their profits. FHP, therefore, assume that $\gamma > 0$, indicating a positive investment–cash flow sensitivity for financially constrained firms, whereas $\gamma = 0$ for the unconstrained firm, which has complete access to external funds in order to smooth cash-flow sensitivity.

For FHP, investment–cash flow regression was an attack on the neoclassical model of investment, which assumes a perfect capital market by concluding that financial variables do not play any role in investment decisions. The neoclassical model consists of the first part of the previous model. For example, in Tobin's q model:

$$\left(\frac{I}{K}\right)_{it} = \beta q_{it} + \varepsilon_{\mathrm{it}} \qquad \textit{Equation 2}$$

Under the assumption of perfect capital markets, q would be the only determinant for investment.

Nevertheless, Kaplan and Zingales (1997) – henceforth, "KZ" – criticized FHP's approach of measuring financial constraints. They argue that the a priori classification of firms in different groups is often set arbitrarily and often not made time-dependent. Hoshi, Kashyap, and Scharfstein (1991) and Schiantarelli (1996) also pointed out that cash flow can also serve as a proxy for the profitability of an investment. In addition, the positive sensitivity of investment to cash flow cannot solely be interpreted as capital and credit-market imperfections but rather should be regarded as firms with better liquidity attaining superior investment possibilities. Thus, more liquid firms have better investment opportunities, and it is not surprising that they tend to invest more. Even though Tobin's q is used to control investment opportunities, it is difficult to measure in practice and may well differ from the marginal q that firms use to make their investments. Tobin's average q can replace marginal q only under very restrictive assumptions (Hayashi, 1982).

An alternative approach to examine financing constraints is through estimating the Euler equation for the capital stock (Claessens & Sakho, 2013). Unlike the q model, this model determines current investment decisions based on expectations of future profitability rather than on the market value of q. By doing so, this method avoids investment-opportunity bias by excluding marginal q. Furthermore, this model also includes total output and cash flow in order to take into account the existence of imperfect capital markets. The Euler equation, as specified in the studies by Bond and Meghir (1994a, 1994b), has the following structure:

$$\left(\frac{\boldsymbol{I}}{\boldsymbol{K}}\right)_{\boldsymbol{i,t}} = \beta_1 \left(\frac{\mathrm{I}}{\mathrm{K}}\right)_{i,t-k} + \beta_2 \left(\frac{\mathrm{I}}{\mathrm{K}}\right)^2_{i,t-k} + \beta_3 \left(\frac{\mathrm{Y}}{\mathrm{K}}\right)_{i,t-k} + \beta_4 \left(\frac{\mathrm{C}}{\mathrm{K}}\right)_{i,t-k} + \beta_5 \left(\frac{\mathrm{D}}{\mathrm{K}}\right)^2_{i,t-k} + \vartheta_I + \varphi_t + \varepsilon_{\mathrm{it}}$$

Equation 3

Where:

- $\left(\frac{I}{K}\right)$ is the firm's investment-to-capital ratio, with I representing the firm's investment and K its capital stock (I is calculated from: $I_t = \mathrm{A_t} - \mathrm{A_{t-1}} + DEP_t$, where A is the net fixed asset and DEP is the firm's depreciation);
- $\left(\frac{Y}{K}\right)$ is the output-to-capital-stock ratio;
- $\left(\frac{C}{K}\right)$ is the cash flow-to-capital ratio;
- $\left(\frac{D}{K}\right)$ is the debt-to-capital ratio;
- i is the number of firms (1, 2, 3, … N);
- t is the period (1, 2, 3, … T);
- k is the number of lags;
- ϑ_I is the individual firm's fixed effect;
- φ_t is the time dummy; and
- $\varepsilon_{\mathrm{it}}$ is the error term.

It assumes that the lag ratio of a firm's investment-to-capital ratio has a positive relationship with the ratio of that firm's investment-to-capital ratio ($\beta_1 > 0$). The coefficient of investment to capital $\left(\frac{I}{K}\right)^2$ in the Euler equation is expected to be negative ($\beta_2 < 0$). The coefficient of output to capital stock $\left(\frac{Y}{K}\right)$ and the cash flow-to-capital ratio $\left(\frac{C}{K}\right)$ are expected to be positive (β_3, $\beta_4 > 0$), as a rise in a firm's output and cash flow will lead to a better balance-sheet condition, with firms increasing their investment as argued by Rungsomboon (2005). The coefficient of debt to capital $\left(\frac{\mathrm{D}}{\mathrm{K}}\right)^2$ is expected to be negative ($\beta_5 < 0$), as a higher debt ratio for a firm will represent a higher leverage ratio and more financial constraint in terms of default risk. This causes a reduction in that firm's investment (Arellano, Bai, & Zhang, 2012).

The Euler equation also has shortcomings. Parameter estimates in Euler equations are often sensitive to the normalization rule (see Mairesse, 1994). In the context of liquidity constraints on consumption, this approach may fail to detect the presence of financial constraints if the tightness of such constraints is approximately constant over time (Zeldes, 1989). There is evidence of instability over time in the underlying adjustment-cost parameters for both the Euler and q models (Hayashi & Inoue, 1991).

Besides demand-side data, supply-side data – if available – can also help to identify financing constraints, but have been little used to date. Claessens and Sakho (2013) suggest that a panel of firm data combined with banking-system characteristics (such as small versus large banks, or domestic versus foreign banks) becomes a potent tool for analyzing financing constraints. As discussed earlier, financing institutions mitigate the risks emanating from information asymmetry by collateral or relationship lending (Boot, 2000; Degryse & Van Cayseele, 2000). Financial institutions may invest in information acquisition in the expectation of future returns, and might then be able and willing to lend more freely to some classes of firms. Therefore, financial institutions' characteristics can relate to the degree of lending to some classes of firms (one can consider these to be clientele effects). The small financial institution, for example, may specialize in lending to smaller firms. Alternatively, financial institutions with particular lending, technology, and human-resources-management policies that are allowed for the use of "soft" information in lending may do better with MSME lending.

Given the lack of time series in both the demand-side and supply-side data on Surinamese MSMEs, we will use a firm survey to assess the determinants of obstacles to financing. Our analysis will contribute to the existing literature in two ways. First, by using survey data on a firm level, we will be able to directly assess the determinants of obstacles to financing in Suriname as well as the specific obstacles to financing faced by firms. Second, focusing on one country allows the inclusion of specific, intrinsic country characteristics, which is challenging for a study aimed at cross-country comparisons. Ethnicity, religion, and networks form such intrinsic elements in Suriname. In designing the survey, we will also take into account the small-state context. We will define micro, small, and medium-sized enterprises according to the practice adopted in small states themselves.

2.4 Access-to-finance studies on Suriname

2.4.1 Context

Suriname is located on the northern coast of South America, bordering Brazil to the south, Guyana to the west, French Guiana to the east and the Atlantic Ocean to the north. It is a high middle-income, small, developing state with a per capita GDP of US$ 6,854.9 (current US$) as of 2019 (World Bank, 2020) and a population of 581,372 as of 2019 (World Bank, 2020). Suriname became independent from its former colonizer, the Netherlands, in 1975.

Suriname's GDP in 2018 was generated 23 percent by the primary sector, 34 percent by the secondary sector, 33 percent by the tertiary sector, and 10 percent by the quaternary sector (author's grouping based on data of the General Bureau of Statistics).

Suriname has a narrow export base (Annex 2.1). Its merchandise exports are strongly concentrated in the mining sector – more specifically, gold. Gold exports accounted for an average of 72 percent of the country's total merchandise exports between 2015 and 2019 (Annex 2.1). Given the high import–GDP ratio, movements in its mining exports or in the exchange rate leaves the country susceptible to external shocks. Suriname has an erratic inflation rate, because of movements in the exchange rate. The exchange rate pass-through is high in Suriname due to its high import-to-GDP ratio. An increase in the nominal exchange rate translates easily and significantly into the inflation rate.

Government debt has risen sharply in the past five years, from 52 to 106.8 percent of GDP by May 2020. The main reason for this steep increase lies in the country's persistent high fiscal deficits.

Sovereign credit ratings declined steeply from the BB category (one notch away from investment grade) in 2015 to the CCC category (one notch away from default) in July 2020 (Annex 2.2). This fall was particularly due to the steep increase in government debt because of the aforementioned huge fiscal deficits and the limited financing options available to the government.

Suriname is a multi-ethnic society – a legacy of its colonial past. Amerindians are its native inhabitants. In the mid-seventeenth century, Suriname was a flourishing plantation colony,

where slaves brought from the west coast of Africa were exploited. Today's "Maroon" population consists of descendants of the slaves fled from the plantations to the interior of Suriname. Against the background of the abolition of slavery in 1863, indentured laborers (Chinese, East Indians, and Javanese) were imported to maintain production on the country's plantations.

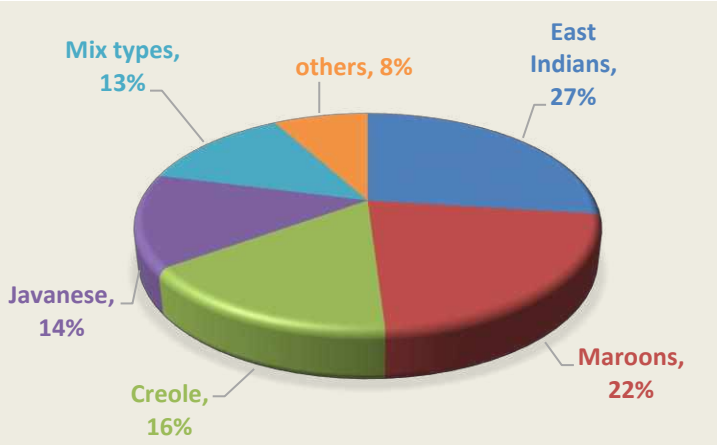
In an attempt to increase the country's small population, formerly indentured laborers were granted a piece of land on a long lease that they could later convert into ownership (Van Lier, 1977). The East Indians and Javanese groups settled into small-scale agriculture after their contracts ended. East Indians specialized in rice cultivation, while the Javanese mainly focused on a mixed produce. During the Second World War, the excess laborers from the agriculture sector migrated to the capital city, Paramaribo, where employment was created as a result of war activities and infrastructure projects.

According to Gowricharn (1990), one characteristic of this urbanization process was that the East Indians mainly focused on entrepreneurship. In the period 1939–50, East Indians owned a third of the newly registered companies in Paramaribo and 85 percent in the main district Suriname. Traditionally, the Chinese were concentrated in the retail and the import business.

The country's first general elections were held in 1949, and its political parties were ethnically and religiously based (Sedney, 2017). Gradually, religion gave way to culture. The various ethnic groups emancipated through the political channel in different periods in the history and at different pace: the creole population in an earlier stage followed by the East Indians and in a later stage the Javanese and the Maroons (Sedney, 2017).

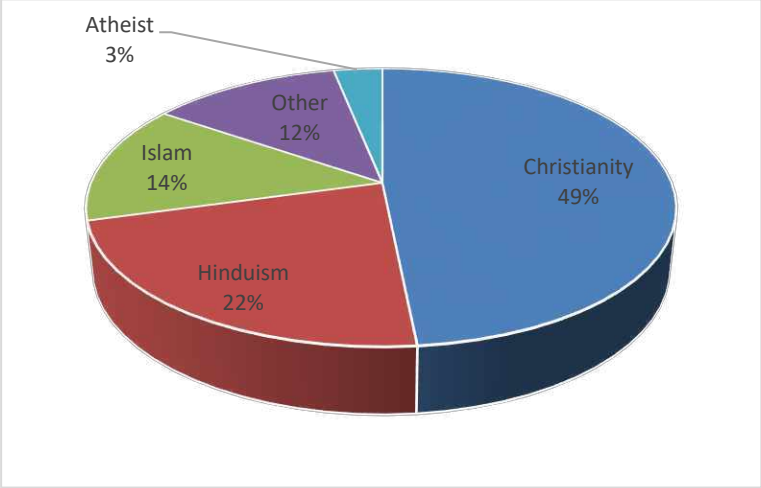
The latest census data (2012) show the following composition of the Surinamese population: East Indians (Indians hereafter) (27 percent), Maroons (22 percent), Creoles (16 percent), Javanese (14 percent), "Mixed types" (13 percent), and others (8 percent) (Figure 2.3). The Chinese ethnic group comprises only 1 percent of the population.

Figure 2.3: Population of Suriname (as of 2012)



Source: General Bureau of Statistics (2014).

Figure 2.4: Religions in Suriname (as of 2012)



Source: General Bureau of Statistics (2014).

The various ethnic groups have their own religious backgrounds. For instance, Indians are mostly Hindu or Muslim, Javanese mainly Muslim, and the Creoles largely Christians.

The religious composition of Suriname as of 2012 was as follows: Christianity (49 percent), Hinduism (22 percent), Islam (14 percent), Other religion (12 percent), and Atheist (3 percent) (Figure 2.4).

Suriname had 12,476 business establishments at the end of 2015 (General Bureau of Statistics [GBS], 2016). The majority of them – 79 percent – are single-person (sole

proprietor) businesses or family firms. This figure includes registered and non-registered firms.

The country has a bank-centered financial system comprising the Central Bank of Suriname, nine commercial banks (including subsidiaries), a number of investment and finance companies, savings and credit unions, the National Development Bank, insurance companies, pension funds, provident funds, the stock exchange, foreign-exchange bureaus, and money-transfer houses. The distribution of financial-system assets was as follows: banks, 75 percent; pension funds, 13 percent; insurance companies, 11 percent; and other institutions, 1 percent (Central Bank of Suriname, 2018).

Suriname's banks are domestically owned except for the Republic Bank, which is fully foreign-owned; furthermore, the government has stakes in five banks. Three major banks dominate the banking system, with around 80 percent of its assets. Banks extend credit in three currencies: the Suriname and US Dollars, and the Euro. There are no means by which credit information is being shared. Recently, the country launched a credit bureau while still awaiting the passing of the Credit Bureau Act in parliament.

Suriname's business environment is weak, in absolute as well as in relative terms (see Figure 2.5). The three indicators relevant for access to finance are procuring credit, enforcing contracts, and resolving insolvency. Suriname has the lowest score on getting credit – 10 out of 100 – relative to the other indicators, while ranking 181st out of 190 countries. Its contract-enforcing score is higher in absolute terms, but the ranking is the weakest – namely, 188th out of 190 countries. On resolving insolvency, Suriname scores just under 34 out of 100 and ranks 139th out of 190 countries.

Figure 2.5: Suriname's rankings on World Bank "Doing Business" topics (1–190)

Source: https://www.doingbusiness.org/en/data/exploreeconomies/suriname, retrieved August 1, 2020.

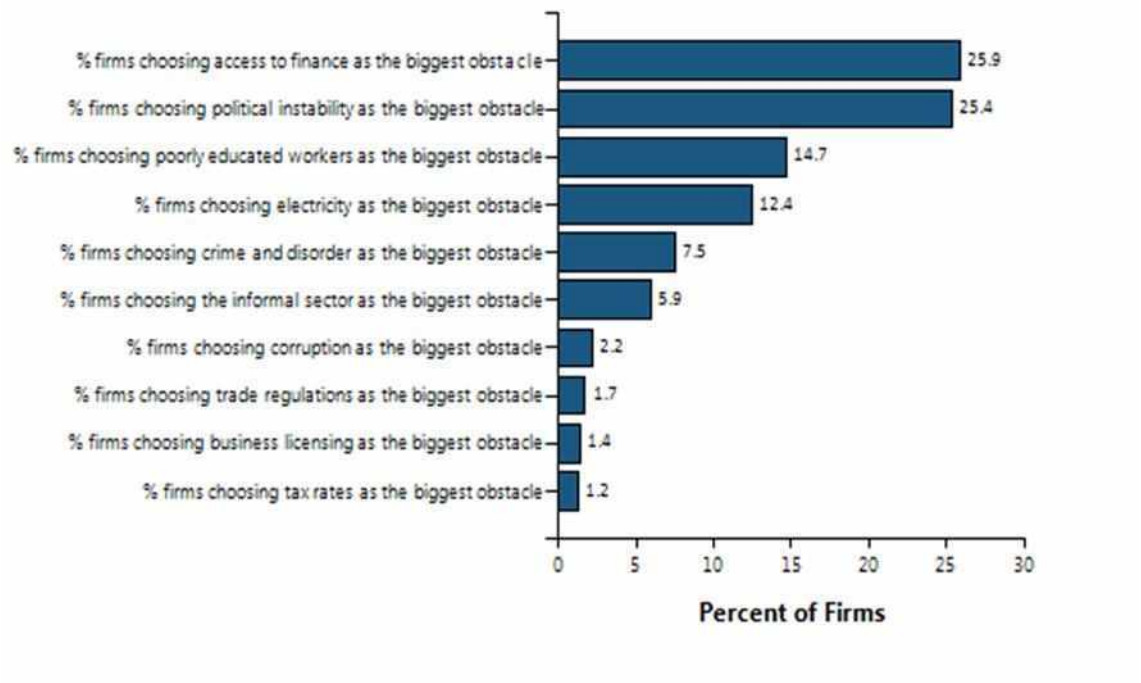
2.4.2 Surveys and studies on obstacles to financing facing firms in Suriname

In this section, we discuss the available surveys and studies on Suriname regarding access to finance, with a focus on the methodology and findings.

Three firm-level surveys are available that could be used for direct measurements of access to finance in Suriname – namely, the WBES of 2011 and 2018, and the Inter-American Development Bank (IDB)/Compete Caribbean PROTEqIN survey of 2014. In addition, the annual World Bank Doing Business Reports and the World Economic Forum's competitiveness index include indicators on the legal and information framework, which also dictates access to finance. Both surveys also include a question on the largest obstacle in the business environment. Other studies – such as Drum (2012), Somaroo (2008), and Van Cooten (2013) – measure access to finance in Suriname qualitatively.

In 2018, the largest share of firms indicated access to finance as the biggest obstacle for doing business in Suriname (Figure 2.6).

Figure 2.6: Rankings of the top business environment obstacles for firms in 2018



Source: http://www.enterprisesurveys.org/data/exploreeconomies/2018/suriname

The World Economic Forum concluded in 2013 and 2014 that access to finance was the third most problematic factor for doing business in Suriname (Table 2.1). Business executives were asked to select the five most problematic factors out of a list of 16 for doing business in their economy and to rank them between 1 (least) and 5 (most problematic). Table 2.1 shows the responses weighted according to their rankings (percent of responses) for Suriname (Global Competitiveness Report 2013 and 2014). Unfortunately, there is a lack of data for Suriname after 2014.

Table 2.1: The most problematic factors for doing business in Suriname

Indicators	Ranking 2013	Ranking 2014
Inefficient government bureaucracy	20.0	19.4
Corruption	15.7	16.7
Access to financing	**15.1**	**13.7**
Inadequately educated workforce	11.6	11.3
Poor work ethic in the national labor force	8.0	7.0
Inadequate supply of infrastructure	5.9	----
Insufficient capacity to innovate	5.3	6.7
Restrictive labor regulations	5.3	3.0
Tax rates	2.9	3.7
Crime and theft	2.7	-----
Policy instability	2.7	3.0
Inflation	1.8	3.9
Tax regulations	1.8	1.7
Government instability/coups	0.8	0.9
Foreign currency regulations	0.4	3.0
Poor public health	0.0	0.6

Source: The Global Competitiveness Index Report 2013 and 2014.

Based on both surveys, we conclude that access to finance is an issue in Suriname, and warrants further research in terms of specific obstacles and their determinants.

Enterprise Surveys for Suriname

The World Bank conducted Enterprise Surveys in Suriname in 2011 and 2018. Table 2.2 provides indicators of the ways in which firms finance their operations and the characteristics of their financial transactions. It quantifies the burden imposed by loan requirements measured by collateral level, and relating to the value of the loans. It also shows the percentage of firms with bank loans or lines of credit. A question was included in both surveys as to whether firms experienced access to finance as a constraint on their operations. Firms' characteristics – such as sector, size, and legal status – are also available.

Table 2.2: Results of the World Bank Enterprise Surveys 2011 and 2018

	2011			2018		
Indicator	**Suriname**	**Latin America & Caribbean**	**All Countries**	**Suriname**	**Latin America & Caribbean**	**All Countries**
Percent of firms with a checking or savings account	100	92.9	88.3	93.5	89.7	85.1
Percent of firms with a bank loan/line of credit	44.3	47.6	37.5	36.6	51.3	31.5
Proportion of loans requiring collateral (%)	44.4	72.4	77	88.4	62.3	79.4
Value of collateral needed for a loan (% of the loan amount)	149.5	197.3	177.1	241.5	201.7	208.2
Percent of firms not needing a loan	39.5	42.1	40.3	43.1	44.3	46.4
Percent of firms whose recent loan application was rejected	...	...	13.9	3.3	3.3	11
Percent of firms using banks to finance investments	37	33.6	27.9	51.8	41.2	24.3
Proportion of investments financed internally (%)	65.2	63.2	68.4	53.5	55.9	71.9
Proportion of investments financed by banks (%)	24.3	20.3	16.8	26.8	26.9	13.7
Proportion of investments financed by supplier credit (%)	1.4	7.5	5.2	...	...	...
Proportion of investments financed by equity or stock sales (%)	8.7	4.3	5.2	...	...	...
Percent of firms using banks to finance working capital	57.6	43	31.6	44.5	41	27.7
Proportion of working capital financed by banks (%)	18.2	16	12.9	35.9	49.2	26
Proportion of working capital financed by supplier credit (%)	21	18.1	11	20.5	16.5	10.8
Percent of firms identifying access to finance as a major constraint	36.2	30.8	31.5	14.3	17.5	25.4

Source: The World Bank (http://www.enterprisesurveys.org).

The proportion of Surinamese firms identifying access to finance as a major constraint on their operations declined considerably from 36.2 percent in 2011 to only 14.3 percent in 2018 (Table 2.2). Despite this improvement, the highest percentage of firms highlighted access to finance as the top business-environment obstacle for firms (Figure 2.6).

The percent of firms in Suriname with checking or savings accounts was higher than either the Latin American/Caribbean average or the world average in both years.

The proportion of Surinamese loans requiring collateral increased from 44.4 percent in 2011 to 88.4 percent in 2018, which is above the Latin America & Caribbean average (62.3 percent) and the world average (79.4 percent).

The value of collateral needed for a loan in the country follows the same pattern. It increased from almost 149.5 percent in 2011 to 241.5 percent seven years later – also higher than the Latin America & Caribbean and the world averages.

The proportion of Surinamese firms not needing a loan increased slightly, from 39.5 percent in 2011 to 43.1 percent in 2018. Those percentages are more or less in line with those of the Latin America & Caribbean and the world averages.

The percentage of the country's firms using banks to finance their investments increased between the two surveys from 37 percent to 51.8 percent.

Table 2.2 also shows that firms finance their investments proportionally to a much greater degree from internal funds than by external finance. In 2011, Surinamese firms financed 65.2 percent of investments internally, declining to a still significant 53.5 percent in 2018. Banks are the main source of external finance for firms in Suriname: the proportion of investments financed by them increased from 24.3 percent in 2011 to 26.8 percent in 2018.

Although figures for 2018 are not available, it is also clear that the use of equity or stock markets by firms to finance investments is low in Suriname.

Banks financed 18.2 percent of the country's working-capital volume 2011, which had increased to 35.9 percent seven years later.

Supplier credit is an important source for financing working capital in Suriname. In 2011 and 2018, 21 percent and 20.5 percent respectively of the country's working-capital volume was financed in this way. In both years, these percentages are higher than the Latin America & Caribbean and the World averages.

Besides the World Bank, the IDB – in collaboration with Compete Caribbean – also undertook an enterprise survey – PROTEqIN – in Suriname in 2014 along the lines of the WBES. In general, its results do not vary much from those of the World Bank Enterprise Surveys, and the limitations of the WBES also apply, by and large, to the PROTEqIN survey.

In fact, both the WBES and the PROTEqIN survey have several limitations. While in 2011, only firms in the capital, Paramaribo, were surveyed, in 2018, the northwestern district of Nickerie was added to the WBES. PROTEqIN also focused on Paramaribo. The results may not be

representative of other districts; the country's agriculture sector, for instance, was not included in any of the surveys. More importantly, micro firms were excluded from both surveys while they actually represent the largest group of firms in Suriname. The issues of ethnicity, religion, and networks were also excluded while these factors are potential determinants of financing obstacles.

The efficiency of the financial market in Suriname is low (Table 3). The average score between 2011 and 2014 is far below the median score on efficiency. In the Executive Opinion Survey, respondents were asked to evaluate one particular aspect of their operating environment, on a scale of 1 to 7, with 1 representing the worst possible situation and 7 representing the best.

The World Bank attributes a high dependency of firms on internal funds, which is the case in Suriname, to low efficiency of the financial markets.

Table 2.3: Efficiency of financial markets in Suriname

	2011–2012	2012–2013	2013–2014	2014–2015
	Score	Score	Score	Score
Efficiency of Financial Market	**2.86**	**2.9**	**2.96**	**2.86**
- Availability of financial services	3.8	3.66	3.8	3.7
- Affordability of financial services	3.16	3.43	3.8	3.6
- Financing through local equity market	3.1	3.05	2.84	2.6
- Ease of access to loans	2.32	2.36	2.35	2.4
- Venture capital availability	1.92	2.0	2.02	2.0

Source: World Economic Forum. The Global Competitiveness index reports 2011-2012; 2012-2013; 2013-2014, and 2014-2015.

Drum (2012) investigated the causes of access-to-finance problems in the credit market for small and medium-sized enterprises (SMEs) in Suriname as part of a government initiative to enhance the competitiveness of the country's firms. His methodology consisted of desk research and ten days of field research in Suriname. Drum identifies the following main impediments of access to finance.

On the supply side/macro level, he identifies:

- relatively high central-bank reserve requirements;
- the requirement of real estate as collateral to the near-total exclusion of all other options, and the absence of an assets registry or a developed secured-transactions regime;
- a lack of formal private or public credit-information-sharing or reporting systems;
- a historical bias in commercial-bank lending towards larger borrowers;
- insufficient financial-reporting regulations and practices;
- a weak investor-protection regime that hinders the development of capital markets;
- little use of modern lending techniques such as leasing or factoring, while the enabling environment to encourage the use of these instruments is absent; and

- low, or non-existent, levels of availability of venture capital.

On the demand side, he identifies:

- The low financial education level found in SMEs, resulting in a lack of skills for preparing business plans and loan proposals.

The Compete Caribbean Private Sector Assessment Report 2012 concluded that overall credit to the private sector in Suriname represents about one-third of total GDP – small by regional standards. The study suggests that an important issue requiring additional research was related to the financial services available to the country's private sector. Based on anecdotal evidence, it concludes that in the field of lending, pervasive use is being made of real estate as collateral while factoring is limited. Additional financial instruments that would potentially deepen financial intermediation – such as a market for government bonds, promoting savings and investments of persons and firms; leasing; secured transactions; and revitalizing the stock exchange to increase trade – are not available.

Others – like Van Cooten (2013), Somaroo (2008), and the Suriname Business Association (VSB) (2010) – suggest that access to long-term financing is a problem in Suriname. These judgments are based on qualitative information and anecdotal evidence. Van Cooten argues that commercial banks should not be expected to finance long-term projects given their short-term funding priorities. Commercial banks operate mostly on short-term deposits, and therefore they are not in a position to satisfy the long-term credit needs of small and medium-sized enterprises. Furthermore, Van Cooten concludes that information on the amount of approved and rejected project proposals is not available as banks defer to data confidentiality. In contrast to Van Cooten, the Suriname Business Association proposes an expansion in the types of collateral accepted by financing institutions beyond real estate – such as movable property, enterprise assets, and cash flow – in order to enhance access to long-term financing.

Shortcomings of studies and surveys

To the best of our knowledge, there is no quantitative study of Suriname regarding the determinants of obstacles to finance. The few studies that exist on the country are qualitative in nature and also based on anecdotal evidence.

As we have seen, the WBES and PROTEqIN surveys executed in Suriname both suffer from weaknesses. Micro firms are not included, for example, while this category of enterprise accounts for the highest share of the country's firm population. Furthermore, no attempt has been made to include survival firms, despite Suriname's large informal sector. They also draw no distinction between family and non-family firms, while this classification seems to be a determinant for obstacles and relevant in the Surinamese case. Additionally, the country's society is assumed to be homogeneous in terms of ethnicity and religion. This assumption veils key features of Surinamese society – namely, its multi-ethnicity and multi-religion aspects – that we expect to be determinants of obstacles to financing and that, therefore, should be explicitly included in the case of Suriname. There is also no attempt to measure networks, while the emerging literature shows that they aid access to finance. Finally, the small-state context is not considered either.

Chapter 3: Obstacles to Financing for MSMEs in Small Developing States

3.1 Introduction

This dissertation on obstacles to financing facing micro, small, and medium-sized firms (MSMEs) in Suriname aims to contribute to the scant literature on small developing states. As Kasseeah and Thoplan (2012) report, most studies on access to financing refer to developed economies or large emerging economies, which hardly reflect the specific characteristics of small states. We aim to fill this gap.

Read (2001) indicates that the economic analysis of small states has its origins in the insights found in the papers in Robinson (1960), which have since been developed further into a robust analytical framework by several other researchers. This framework focuses on the impact of market imperfections on the economies of small states, in contrast to the neoclassical economic assumptions of constant returns to scale, perfect competition, and zero transport costs. It facilitates the conceptualization of the economies of small states as sub-optimal. This highlights the crucial impact of scale economies, indivisibilities, efficiency, and competitiveness, as well as diseconomies of scope, on the potential to generate a "critical mass" in domestic economic activity.

While studies of small states mostly focus on growth and other macroeconomic performance vis-a-vis large states, to the best of our knowledge there are no studies to date on obstacles to financing facing firms from a small-state perspective. We argue that the specific characteristics of small developing states, emanating from their size, create unique challenges for the credit market. These characteristics and challenges should be taken into consideration when identifying obstacles to financing for MSMEs and when designing policies to enhance access to finance.

Small developing states are highly vulnerable to external economic shocks and natural disasters, leading to significant volatility in incomes (IMF, 2013), which in turn affects the ability of banks to finance their MSMEs. Furthermore, information asymmetry and agency

costs, which are intrinsic to credit markets in general, are exacerbated by the deficiencies in the operating environment of banks and firms in those states. In addition, a lack of capacity inhibits the development of the operating environment. Banks, as well as firms, use non-standard means of communication to bridge the existing information gap under these circumstances. Banks, for example, rely on relationship lending to cater to the financing needs of MSMEs. Advances in the field of financial technology offer solutions to alleviate financing constraints. Finally, credit-guarantee schemes could potentially enhance access to finance for MSMEs.

While on the one hand small states are expected to encounter challenges emanating from their size, on the other hand they are expected to display greater social cohesion than larger countries, which in turn has a positive impact on the quality of institutions and policymaking (Read, 2018). The adeptness of small states in identifying growth opportunities and implementing effective growth policies results in counterintuitive growth performance vis-a-vis larger countries (Read, 2018). In this study, we focus on the impact of the size of small developing states on obstacles to finance for MSMEs.

In this chapter, we begin by defining small states, followed by a description of their general characteristics. Subsequently, we discuss the factors inhibiting access to finance. Finally, we investigate the mechanisms available to banks and firms for dealing with weaknesses in their operating environment.

3.2 Defining small developing states

There is no consensus on how to define small states. A small state may be defined based on various criteria, such as the size of its population or territory, or its GDP (World Bank, 2000). Given the high level of correlation between population and the other two measures, there is a tendency to use population size as a criterion. The Commonwealth Secretariat (2015) uses a threshold of fewer than 1.5 million people to define small states. This metric is also used by the IMF and the World Bank (IMF, 2013, 2014, 2017; World Bank, 2000). Even so, those institutions do not have identical lists of small states. For instance, the World Bank catalogs 50 small states grouped into the regions Africa (13), East Asia Pacific (13), the Caribbean (13), the Middle East and North Africa (3), Europe and Central Asia (6), and South Asia (2) (Annex 3.1). In its World Development Indicators Database, the World Bank uses four groupings – namely, small states, Caribbean small states, Pacific small states, and Other small states.

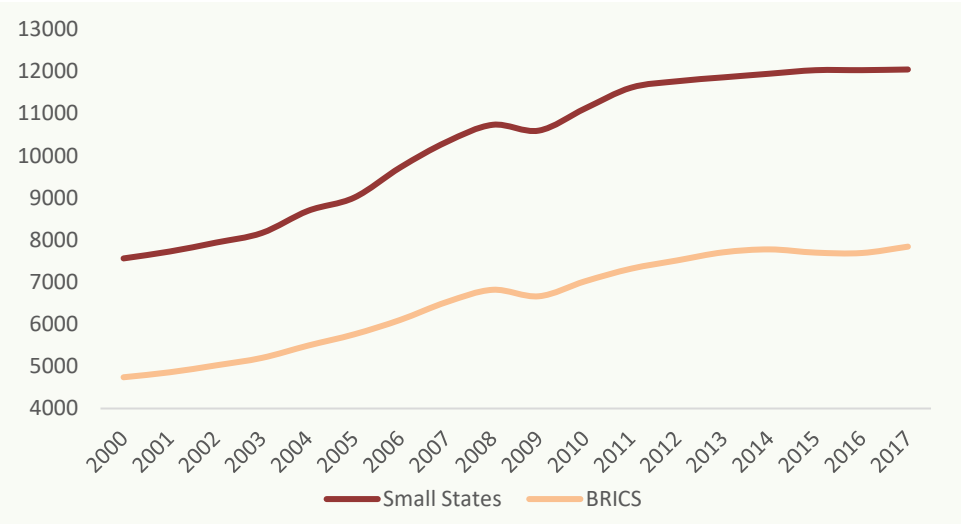
The IMF has a list of 34 small developing states across the Caribbean (12, of which 5 are high income and 7 upper middle income), Asia-Pacific (14, of which 1 is high income, 5 upper middle, and 8 lower middle income), and Other Regions (8, of which 1 is high income, 2 upper middle, 4 lower middle, and 1 low income) (Annex 2). The IMF's small developing states group excludes small states defined as advanced market economies for World Economic Outlook (WEO) purposes and fuel-exporting countries classified by the World Bank as "high income" (Bahrain, Brunei Darussalam, and Equatorial Guinea) (IMF, 2017). In the list of 34 small developing states, 26 are island states and 16 microstates with populations less than 200,000 (Annex 3.2).

Despite sharing some common characteristics, small developing states do not represent a homogeneous group of countries. On the contrary, they show significant differences across regions, concerning their geography, natural-resource endowments, and other characteristics (IMF, 2013, 2014). In the Caribbean, a further distinction is made between commodities-exporting versus tourism-based small states. Suriname, Trinidad and Tobago, and Guyana are commodity-exporting states, while the rest are tourism- based.

3.3 Stylized facts

A comparison between small and large developing countries reveals the fact that small economies outperform their larger counterparts in terms of income level (see Figure 3.1).

Figure 3.1: Small states vs. BRICS per capita GDP (in constant 2010 US$)

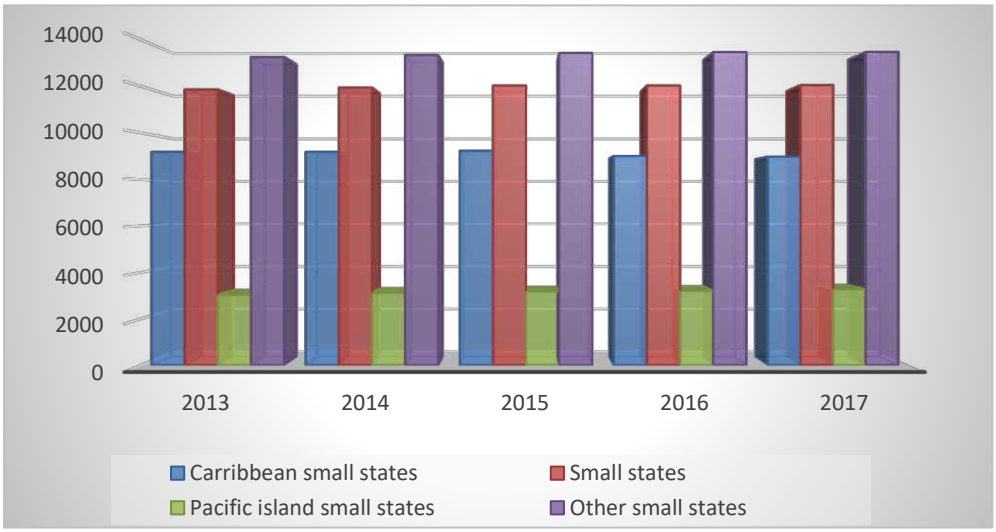


Source: World Bank (2019).

Note: BRICS refers to Brazil, Russia, India, China, and South Africa.

Per capita GDP differs considerably between the various small states' regions. For example, the Caribbean small states have, on average, a much higher GDP per capita than the Pacific-island small states. The other small states, which also include small developed states, have, on average, a higher GDP per capita than the average total for small states (Figure 3.2).

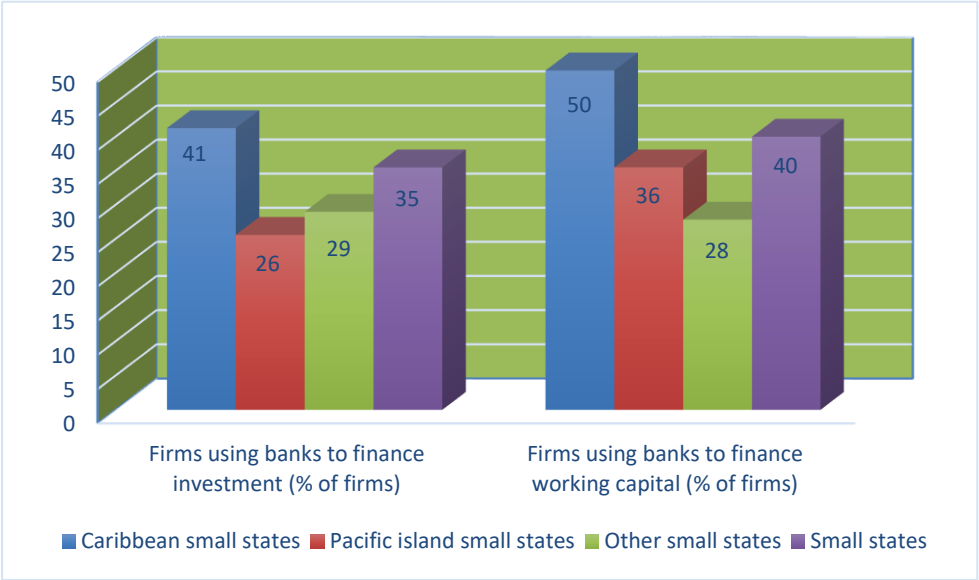
Figure 3.2: Small states by region (GDP per capita in constant 2010 US$)



Source: World Bank (2019).

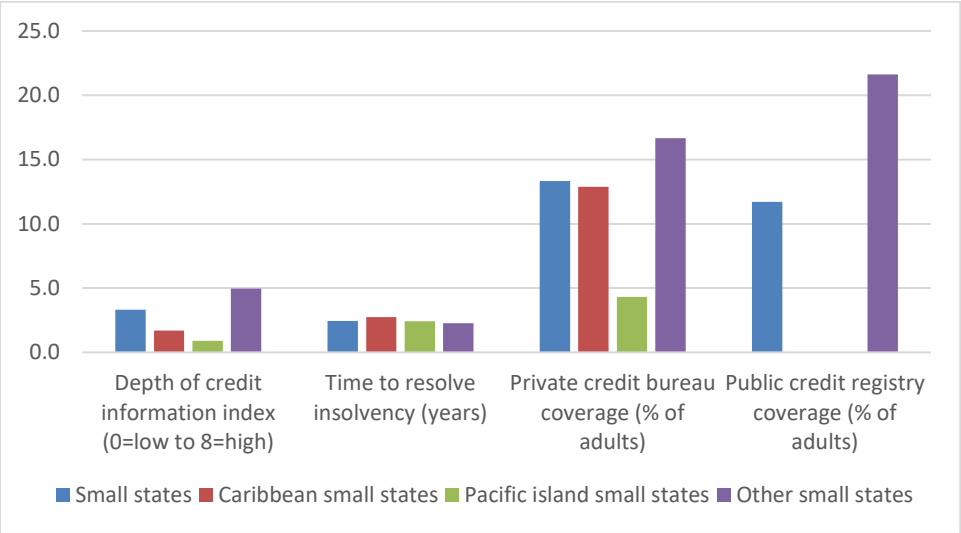
The extent to which firms use bank credit to finance investment and working capital differs in each region. According to World Bank (2019), as of 2017, on average, small states' firms in the Caribbean made more use of bank credit than firms in the other two regions (Figure 3.3).

Figure 3.3: Firms' use of bank credit in small-states regions in 2017



Source: World Bank (2019).

Figure 3.4: Selected access-to-finance indicators in small-states regions in 2018

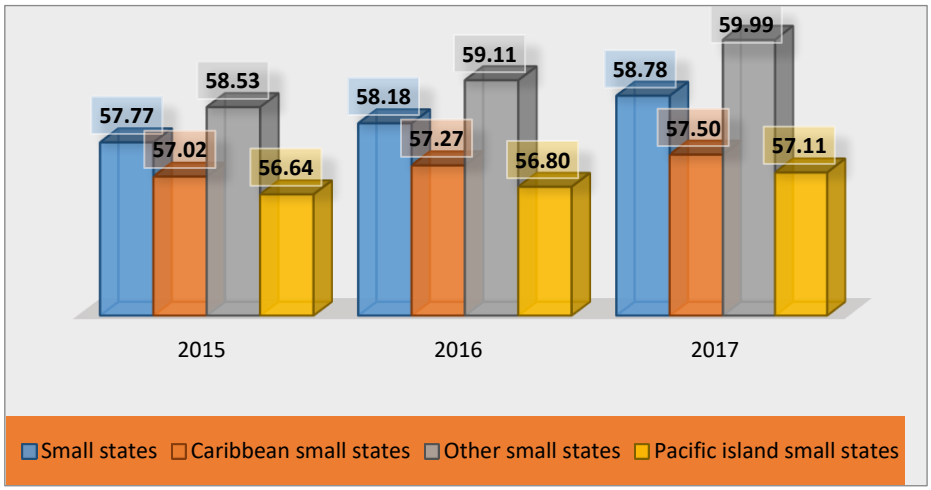


Source: World Bank (2019).

Based on Figure 3.4, we conclude that Caribbean and Pacific small states score low on the depth-of-credit-information index, and require more or less the same time to resolve insolvencies (2.7 years in the Caribbean and 2.4 years in the Pacific). In the Caribbean small states, private credit-bureau coverage is significantly higher than in their Pacific equivalents, while in both regions, public credit registry is absent. In Suriname, for instance, the country's first private credit bureau has only recently been launched.

The distance-to-frontier scores for doing business, are comparable between the Caribbean and Pacific small states, while the Other small states have, on average, higher scores (Figure 3.5). This implies that Caribbean and Pacific small states face similar challenges in doing business.

Figure 3.5: Distance-to-frontier score in small states regions



Source: World Bank (2019).

Note: The distance-to-frontier (DTF) score is derived from the World Bank's Doing Business indicators, and shows, at a given point in time, how far on average an economy is from the best performance ('frontier') achieved by any economy on each Doing Business indicator since 2005 – or the third year in which data were collected. The measure is normalized to range between 0 and 100, with 100 representing the frontier.

3.4 Distinctive characteristics of small states that affect access to finance

In this section, we discuss distinctive characteristics of small developing states in relation to the obstacles to financing facing MSMEs. We start with the most obvious characteristic – namely, small size or small market – followed by other characteristics, all rooted in the small size of these states.

We discuss the following characteristics (IMF, 2013, 2014):

- Small scale and capacity constraints.
- Macroeconomic volatility.
- The thin economic base and limited competition.
- Weak credit-market infrastructure.
- Information opacity and high costs.

We argue that small size leads to a weak operating environment, which in turn stagnates MSME financing**.** In Chapter 2, we found information asymmetry and related costs and risks to be the main reason for difficulties in MSMEs accessing finance. While information

asymmetry is intrinsic to all credit markets, the risks emanating from it are exacerbated by weaknesses in the operating environment of small developing states (OECD, 2010).

3.4.1 Small scale and low capacity

Small states are plagued by diseconomies of scale, as production technologies often entail indivisible fixed costs (Read, 2001). Their scale hampers the provision of public goods and services in such states, including the development of contractual, judicial, and information frameworks. Small states thus lack the necessary "critical mass" to benefit from scale economies.

In addition, their capacity to design and implement policies is limited, while skills shortages hamper their institutional capability. Capacity constraints also inhibit the upgrading of the operating environment within a reasonable timeframe.

Finally, as a result of their market size the majority of the firms in such states fall into the categories "micro" and "small." Due to relatively high costs per unit of credit for these firms, coupled with high fixed costs in expanding banking services, the amount of credit extended to them is generally constrained.

3.4.2 Macroeconomic volatility

Macroeconomic volatility is higher in small states than in larger countries. Small developing states are typically characterized by narrow production and export bases, a lesser degree of diversification, greater vulnerability to external shocks/events (including natural disasters), and greater macroeconomic volatility compared with their larger peers (IMF, 2013; Commonwealth Secretariat, 2015; Bräutigam & Woolcock, 2001). This high degree of openness to external events leaves them susceptible to shocks originating in their major trading partners. Remoteness and geographical dispersion (which apply mainly to Pacific-island small states) also increase transportation costs and inhibit regional integration. Due to the scarcity of domestic capital in, especially, Pacific-island nations, foreign direct investment (FDI) and aid flows are considered to be essential growth factors (Gounder & Xayavong, 2011).

Finally, financial markets in small states are underdeveloped – which, coupled with the aforementioned challenges, results in high dependence on external aid, concessional debt, and financing constraints for firms.

The volatility stemming from internal and external shocks results in erratic economic growth and exchange rates, and inflation. The accompanying macroeconomic risk results in higher base interest rates, which in turn price out borrowers (Beck & de la Torre, 2007). Thus, macroeconomic volatility hinders access to bank finance even if information-asymmetry-related issues are manageable.

In the small, open economies of the Caribbean, the quality and allocation of corporate credit in the short term is strongly influenced by the business-environment context (economic cycles) and long term by investment demand (Birchwood, 2003; Birchwood & Nicholls, 1999). One of the consequences of macroeconomic instability, which arises mainly from cyclical movements, is that the supply of long-term credit becomes inadequate (World Bank, 1998; Birchwood, 2003). Under these circumstances, bank funding is generally short-term in nature and does not allow banks to extend long-term investment credit.

3.4.3 Thin economic base and limited competition

The thin economic base in small developing states supports only a few financial institutions, while lending opportunities for banks are limited. As a result, banks lend disproportionately to the government. The heavy presence of the government in the shallow securities markets may crowd out private-sector financing. Banks may have an incentive to lend to the government rather than the private sector, given easier credit assessment and, more importantly, a zero risk weighting. This results in a zero provisioning on loans to government, as opposed to positive provisioning on loans to the private sector. In heavily indebted small developing states, fiscal sustainability should be a high priority in order to avoid crowding out private investments and, arguably, the potential adverse effects of excessive lending to the government for banks themselves (IMF, 2013). Besides, in such states, debt issuance in international markets is advocated in order to free up domestic resources for the private

sector (IMF, 2013). However, foreign-currency loans could increase the fiscal burden in the case of an upward movement of the exchange rate.

Competition and the deepening of financial services are limited by the small market size and the concentrated market structures in shallow banking systems. Even when foreign banks are active in small developing states, persistently high spreads between lending and deposit rates remain, which deter investment and financial development.

Mudd (2013) reports on a theoretical debate regarding the effects of bank-market power on access to credit. There are two contending views. In one view, lack of competition in the banking sector results in higher interest rates and thus reduces lending demand. As described in Chapter 2, an increase in the interest rate in response to information asymmetry might enhance moral hazard and adverse selection. Therefore, banks might choose not to increase the interest rate but to just ration credit supply in response to these information-asymmetry problems (Stiglitz & Weiss, 1981). These problems reinforce the negative relationship between the banks' market power and firms' access to finance. In additional, in an oligopolistic market, dominant banks could oppose improvements in the contractual and informational frameworks in order to retain the existing level of rents (Beck & de la Torre, 2007).

In the other view, market power results in better access to credit (Petersen & Rajan, 1995). The reason for this is that the higher profits produced by market power enable banks to invest more in monitoring and developing long-term relationships. Consequently, market power may result in increased credit supply – especially for new or relatively risky firms. According to the IMF (2013, 2014), financial innovation and improvements in cost efficiency appear to have been constrained by oligopolistic markets in small developing states. Market power frustrates access to finance for MSMEs in those states.

3.4.4 Weak credit-market infrastructure

In small developing states, there is generally a paucity of credit bureaus; a lack of, or ill-enforced, collateral registration; and weak contract enforcement (The World Bank and FIRST Initiative, 2015; Sharma & Gounder, 2012; OECD, 2010). This less-developed credit-market infrastructure could result from the scale challenges represented by these features in terms

of the provision of public goods and capacity constraints, or from an oligopolistic market in which dominant players successfully oppose improvements in order to retain rent levels (Beck & de la Torre, 2007).

Banks are reluctant to lend to MSMEs when the required credit-market infrastructure is not developed. Under these conditions, banks cannot adequately assess the riskiness of projects or the morality of the borrowers in "arms-length" credit transactions – a situation that results in uncertainties about a project's expected rate of return and the integrity of the borrower associated with it. Instead, banks rely on non-price screening and monitoring mechanisms such as highly personalized "relationship lending." They might also depend heavily on fixed assets as collateral – mainly, real estate (Beck & de la Torre, 2007).

3.4.5 Information opacity and high costs

Small states have many small businesses, which generally are known for holding insufficient information on their own operations (Lean & Tucker, 2001; De la Torre et al. 2007). Since many small-state MSMEs operate in the informal sector, they could not use credible accounting firms to adhere to the required accounting-reporting standards – even if that were financially feasible. This leads to poor-quality information being provided to banks when they apply for loans (Gondwe, Midmore, Christie, & Ruziev, 2014). Due to the informality involved, these firms cannot provide the standard documentation required, such as legal registration documents and financial statements (Gondwe et al., 2014). Under such circumstances, banks must raise their costs for evaluating credit applications and monitoring credit contracts. These costs per unit of credit could be high, and therefore can strain smaller credit recipients. This is the case when the cost of providing credit is higher than the risk-adjusted yield for the credit provider (De la Torre et al., 2007). Banks tend to set higher collateral requirements or resort to relationship-based loans under those circumstances (Berger & Udell, 2006; Menkhoff et al., 2006; Peachey & Roe, 2004).

Furthermore, high transactions costs relative to small loan size yield low profitability to banks and constitute the main disincentive to cater for small firms (Levitsky, 1997; OECD, 2010; Saadani, Arvai, & Rocha, 2010; Sharma & Gounder, 2012; The World Bank and FIRST Initiative, 2015). In these circumstances, the availability of collateral becomes key in lending decisions.

However, many MSMEs do not possess enough assets or the right type of collateral as demanded by banks, which then becomes one main obstacle to their obtaining credit.

3.5 Mechanisms to manage information asymmetry in small developing states

Gondwe et al. (2014) argue that the lack of "hard" data and the deficiency of classical communication channels between banks and MSMEs may be compensated for by informal communication channels. Under such circumstances, the reputation of the entrepreneur and their existing relationship with a bank become a valuable asset in the credit-evaluation process. As a result, firms and banks make use of networks. Bräutigam and Woolcock (2001) argue that in the case of small states, the size of the countries involved could potentially accommodate a smoother flow of information since people tend to know each other.

Banks also rely on relationship lending to bridge information gaps and alleviate the effects of information asymmetry. Advances in financial technology (Fintech) offer additional solutions for MSME financing. While in the traditional branch-based bank model, high fixed costs – especially in small states, because of their small credit markets – prevent the expansion of banking services to MSMEs, Fintech solutions within the context of branch-less banking services, characterized by lower fixed costs, could deliver these services. Small states could consider the development of non-collateral-based methods of financing, such as leasing and factoring, in order to overcome the challenges induced by collateral-based lending. Finally, credit-guarantee schemes could provide the comfort that banks need in order to lend to small firms, while at the same time improving the operating environment.

3.5.1 Networks

In small states, due to close interactions between people, networks are expected to play a greater role in economic life than in larger countries (Read, 2018). They facilitate the credit-evaluation process through four channels:

1. Information: a network facilitates the flow of information, either through social relationships or through membership of organizations.
2. Influence: social relationships may provide additional information conducive to decision-making.
3. Social credentials: the membership of a network functions as a "certificate" for, or key to, access to information.
4. Identity/recognition: social relationships are instrumental in strengthening the identity and recognition of certain persons, which may in turn create trust (Uzzi, 1999; and Lin, 1999).

According to Watson (2011), banks in developing countries use informal channels to obtain additional information about borrowers in order to mitigate the lack of public data. The network relationship between firms' managers and a bank may contribute to better access to finance. Coleman (1988) argues that networks result in the cost-effective acquisition of information to support decision-making that would be otherwise prohibitive expensive to obtain. Transaction costs are alleviated by networking. Talavera et al. (2012) argue that networks become more relevant in developing and emerging-market countries due to underdeveloped operating environments often accompanied by corruption, and because of the lack of human and material resources, poor management, and inefficient judicial systems.

3.5.2 Relationship lending

Relationship lending is a means of dealing with information asymmetry. It stimulates interactions between banks and small firms in order to collect "soft" information through exchanges involving firms, owners, managers, and the local community. The availability and terms of credit may depend on this information. Relationship lending thus differs from conventional lending, which is based on hard information. According to Berger, Klapper, and Udell (2001), smaller firms tend to be information-opaque and their operations tend to be informal. Business planning involving such firms is limited, and does not generate sufficient sound information from which to project and analyze their prospects and performance. On the other hand, the gathering of soft information through relationship lending is resource intensive and thus costly.

As efforts by banks to collect information do not become proportionally onerous as the size of the loan grows, average costs for small borrowers are, generally, relatively high. This situation discourages banks from lending to this market segment, especially when interest revenue cannot compensate for the disproportionately high costs. An additional bottleneck is presented by difficulties in transmitting soft information up the strata of a conventional bank hierarchy. Therefore, this type of lending is better suited to banks that have fewer management levels between their loan officers and loan decision-makers (Stein, 2002; Berger & Udell, 2002). Given the weakness of the operating environment and the large number of micro and small firms in small developing states, relationship lending by banks could enhance access to finance for MSMEs.

3.5.3 Non-collateral-based financing

Leasing and factoring are two non-collateral-based financing options that could help to overcome the obstacles to financing facing MSMEs in such a weak operating environment (Alliance for Financial Inclusion [AFI], 2019).

Leasing of machinery and equipment is a complementary source of investment finance to the conventional channels, and could help in surmounting a shortage of investment finance. While investment financing by financial institutions is based on a firm's credit history or its capacity to pledge collateral, leasing focuses on the firm's cash-flow-generating capacity.

Factoring is an alternate source of working capital: firms sell creditworthy account receivables at a discount rate to specialized institutions, and receive immediate funds.

The legal infrastructure in small states should be developed to encourage the use of these alternative methods of MSME financing.

3.5.4 Financial technology

Financial technology has the potential to enhance access to finance for MSMEs in small developing states. It accommodates cash-flow-based loans without collateral (Chatterjee, 2018). These loans differ from traditional asset-backed loans, in which the valuation of

collateral becomes one of the prime factors in credit decisions. The narrow range of collateral accepted by banks forms one of the significant obstacles to financing facing small-state MSMEs.

While mobile banking has the potential to facilitate financial accessibility, governments should develop the supporting institutional and regulatory frameworks required to bolster Fintech firms and to protect consumers. In doing so, branchless transactions could be promoted (Asian Development Bank, 2015). This is especially important for small developing states, as a branch-based banking system requires high fixed costs and may deter the provision of banking services in specific regions or to certain market segments due to the diseconomies of scale involved.

3.5.5 Credit-guarantee schemes

Credit-guarantee schemes (CGSs) are common intervention instruments used by governments to enhance access to finance for MSMEs (OECD, 2010; Levitsky, 1997). CGSs cover a share of the default risks of a loan and, in doing so, provide the necessary risk comfort to banks to lend to groups/firms that otherwise would not qualify for a loan despite having viable economic projects (OECD, 2010). CGSs essentially compensate a portion of the lender's losses on a loan when the borrower is not able to service the debt (Saadani et al., 2010).

As discussed earlier, small developing states are typically characterized by weak operating environments, which exacerbate the risks emanating from information asymmetry – especially for MSMEs. CGSs are, therefore, highly relevant for small developing states, to provide the necessary comfort for banks to lend to MSMEs.

Besides the merit of covering part of the default risk, CGSs also facilitate the learning process of banks' engagement with MSME segments of the market and allow borrowers to build a track record with banks, which could facilitate future borrowing (Levitsky, 1997). Levitsky suggests that lending institutions assume some of the risks as this forces them to assess the risks involved in small-client projects and, in doing so, acquire the skills – through this learning process – to deal with this market segment. CGSs could also facilitate the provision of countercyclical financing to MSMEs as, during an economic downturn, the risk aversion of

banks increases and a “credit crunch” can occur (Saadani et al., 2010). CGSs could alleviate this risk aversion on the part of banks.

According to Levitsky (1997), the reforms of the financial markets in the 1980s were based on the premise that liberalized markets with enhanced competition and appropriate setting of interest rates would take care of the credit problem faced by small firms. However, by the mid-1990s, there was little evidence that commercial banks had opened up to the MSME market segment. This development spurred renewed interest in CGSs as a vehicle for enhancing MSME access to finance.

CGSs are favored above direct forms of interventions, such as state-owned banks, as they combine a subsidy element with market-based credit allocation through commercial banks (Saadani et al., 2010; Sharma & Gounder, 2012).

According to Levitsky (1997), potential moral hazard on the part of both banks and borrowers is inherent in CGSs. Banks might have less incentive than they would otherwise have to assess the risk associated with a loan and to apply rigorous loan-management practices; borrowers might not have much incentive to repay the loan as they know that the CGS will come into play in case of default. However, Levitsky argues that competent banks tend to uphold their reputation for high-loan-quality portfolios and, therefore, will make efforts to avoid loan default. SMEs could thus be denied further loans in case of default, even if a CGS covers the losses this time round. Thus, moral hazard is potentially present; in practice, it might be less of an issue – especially when the CGS concerned has a sound governance structure.

3.6 Conclusions

In this chapter, we have focused on the sources of obstacles to financing faced by MSMEs in small developing states. Such obstacles are dictated by the peculiar characteristics of small developing states, such as:

- small scale and capacity constraints;
- macroeconomic volatility;
- a “thin” economic base and limited competition;
- weak credit-market infrastructure; and
- information opacity and high costs.

While enhancing the operational environment is warranted in the long term, due to capacity constraints this process might take some time in small developing states. Governments could consider CGSs in order to enhance access to finance for MSMEs. Additionally, banks – as well as MSMEs – should actively use networking to bridge any information gaps. Furthermore, banks could employ relationship lending to cater to the particular financing needs of MSMEs. Finally, advances in financial technology have the potential to lessen the financing difficulties facing MSMEs, and they should be explored in greater depth.

Chapter 4: Determinants of Obstacles to Financing Facing SMEs in Selected Small Developing Caribbean States

4.1 Introduction

In this chapter, we estimate determinants of the obstacles to external financing facing small and medium-sized enterprises (SMEs) in selected developing Caribbean states, using pooled data from six CARICOM countries – namely, Suriname, Barbados, Belize, Guyana, Jamaica, and Trinidad and Tobago. Except for Jamaica, these countries belong to the category of small developing states. Jamaica has a population of greater than 1.5 million but shares characteristics with other small developing states, and is therefore included in the data pooling. This analysis forms part of a broader study aimed at assessing the extent and nature of obstacles to financing for micro, small, and medium-sized enterprises (MSMEs) in Suriname from a small-state perspective. However, micro firms are not included in this chapter as the databases on which the analysis is based exclude them.

Access to external finance is a crucial determinant of a firm's ability to maintain and expand production. The literature provides evidence that obstacles to external financing impede investments and hamper the growth potentials of firms. This is especially true for SMEs (Hubbard, 1998; Beck et al., 2007; Cole & Sokolyk, 2016).

The theoretical explanation for the presence of obstacles to financing is centered on information asymmetry and agency problems (Han et al., 2009; Djankov et al., 2007; Poncet et al., 2010). Stiglitz and Weiss (1981) provide compelling arguments in this regard. They argue that borrowers have private information about the riskiness of their project returns, and that lenders cannot necessarily distinguish "good borrowers" from "bad borrowers" as this riskiness is not observable. Furthermore, varying the interest rate does not solve the problem, as higher interest rates may attract high-risk borrowers (the adverse-selection effect) or adversely affect the actions and incentives of borrowers (the moral-hazard effect). Therefore, banks ration credit. Thus, the intensity of information asymmetry determines the levels of obstacles to financing experienced by various groups of firms.

To conduct the analysis, we use secondary data collected by the World Bank within their 2010 Latin American and Caribbean Enterprise Survey Initiative. For the robustness check, we repeat the estimation of the same model using data from the 2014 PROductivity, TEchnology and INnovation (PROTEqIN) survey, which was conducted by the Inter-American Development Bank (IDB) in collaboration with Compete Caribbean.

Quantitative studies on the determinants of obstacles to financing in the small states of the Caribbean are scant. With our study, we contribute to the small-state literature on such obstacles. While results from cross-country studies could be informative for policymaking, it remains essential to assess the obstacles in the individual countries themselves, especially given the inconclusive results of studies on determinants of a firm's obstacles to external financing. Therefore, in the next chapter, we assess the determinants of MSMEs' obstacles to financing based on a unique Suriname dataset.

Commercial banks form the dominant class among financial institutions in the Caribbean region. Although finance companies, mortgage banks, insurance companies, and credit unions have assumed a more significant role in the last decade and a half, according to Branch (2007), banks remain the primary source for funding household expenditure.

The banking sector in most Caribbean countries is dominated by a few large institutions, which are mostly privately owned or are subsidiaries of foreign banks. Country-specific factors such as small size and diseconomies of scale, continued low growth, high debt, and vulnerability to external shocks pose a barrier to the development of the banking sector in most countries in the region. The relatively high banking concentration in the Caribbean reflects low levels of competition in the market and explains the broad interest rate spreads in these countries. Also, factors such as lack of collateral, inadequate credit information, and the state of legal systems impede access to financing, particularly for SMEs (Branch, 2007; Holden & Howell, 2009).

We use two different models – an ordered probit model and an ordered logistic model – to conduct the analysis. From the analysis, we found firms' sector, size, age profile, gender makeup, educational levels, and adoption of financial statements to be statistically significant determinants of obstacles to financing.

The remainder of this chapter is organized as follows. Section 4.2 provides a brief discussion of the empirical literature on the determinants of obstacles to external financing faced by SMEs. Section 4.3 presents the various components of the empirical study, including data source, variables, data characteristics, the empirical model, and the regression results. Section 4.4 covers model results and discussion, and Section 4.5 concludes.

4.2 Literature review on determinants of obstacles to external financing faced by firms

Studies report several determinants of obstacles to external financing faced by firms, such as age (young vs. old); size (micro, small, medium, or large); ownership (domestic vs. foreign-owned, family vs. non-family-owned); gender (male vs. female); sector (manufacturing vs. services); and economic and financial development. However, the results are inconclusive. Next, we review the findings of empirical studies for each determinant.

4.2.1 Sector

The sector in which a firm operates is a potential determinant of obstacles to financing. Firms in certain sectors require more credit than others to invest in equipment, machinery, buildings, labor, and raw materials – and, hence, may encounter proportionately higher constraints than firms in other sectors. Hall, Hutchinson, and Michealas (2000), for example, found that the manufacturing and services sectors are the strongest predictors of financing constraints. Firms operating in the manufacturing sector, for instance, require relatively more investments in assets such as land, factory buildings, plant and machinery, and vehicles. By comparison, most of the firms in the services and retail sector need fewer investments in fixed assets. However, contrary to Hall et al. (2000), Ferrando and Griesshaber (2011) failed to establish that sector is a significant predictor of obstacles to financing.

4.2.2 Size

Several studies report that small firms tend to entail higher credit risks than large ones because information about the former group is usually inadequate (Beck et al., 2006; Berger et al., 2011; Dong & Men, 2014). As a result, financial institutions cannot make accurate assessments of credit risks, and smaller firms experience more obstacles to financing than larger ones. Additionally, smaller firms demand smaller credit amounts, thus increasing the (monitoring) cost per unit of credit for banks (such as for project screening and monitoring

costs), and also they often lack adequate management skills – both of which factors, taken together, result in lower levels of interest from banks in lending to smaller firms.

4.2.3 Age

In general, younger firms – in terms of years of operation – experience a relatively higher number of obstacles to financing than older ones. Beck et al. (2006) used survey data on a sample of over 10,000 firms from 80 countries from the World Bank Enterprise Survey and found the age of firms to be one of the determinants of obstacles to financing. Dong and Men (2014) confirmed that younger firms tend to face higher obstacles to financing in emerging markets, using data from the World Bank Enterprise Survey. In addition, Kira (2013) confirmed that SMEs face more obstacles than larger firms, using a sample of 1,933 firms located within five East African countries with a certain level of economic integration known as the East Africa Community (EAC) and using data from World Bank Business Enterprises. Finally, Canton, Grilo, Monteagudo, and van der Zwan (2012), using survey data from 2005 and 2006 covering almost 5,000 SMEs in the European Union, concluded that older firms perceive obstacles to external financing to be less severe than younger ones do.

Younger firms lack credit history and experience in an industry, making it difficult for financing institutions to conduct credit-risk assessments. Furthermore, young enterprises lack adequate data and skills for preparing financing proposals. In contrast, older firms have an established credit history and proven experience in an industry, making it easier for financing institutions to assess their associated risks. Furthermore, their data availability and experience with the process of getting credit is better than those of younger firms. Older firms have also undergone repeated transactions with financing institutions, leading to the building-up of a reputation ("track record") and thus lowering credit risk and collateral demand. Therefore, older firms are expected to report lower numbers of obstacles than younger firms are (Berger & Udell, 1995; Boot, 2000; Degryse & Van Cayseele, 2000).

4.2.4 Gender

According to Carter, Shaw, Lam, and Wilson (2007), structural differences between male- and female-owned firms and gender discrimination are the main reasons for the reduced

likelihood of women to resort to external debt financing. Asiedu, Kalonda-Kanyama, Ndikumana, and Nti-Addae (2013), for example, report, using data for 34,342 firms from 90 developing countries, that female-owned firms in sub-Saharan Africa are more likely to be financially constrained than their male-owned equivalents. In other developing regions, however, they did not find the gender gap to be significant. A study by Moore, Presbitero, and Rabellotti (2017) found evidence that women-led firms in Caribbean nations, including Suriname, are not only less likely than other enterprises to demand bank credit but also more liable to identify access to financing as a severe obstacle to their businesses. Regrettably, in most studies, gender is not considered as a determinant of obstacles to financing.

4.2.5 Education

The impact of education levels on access to financing and, consequently, on obstacles to financing, is mixed but tilted towards a positive relationship. This implies that higher levels of education lead to better access to finance or, at least, less likeliness to encounter obstacles to financing (Ogubazghi & Muturi, 2014).

Firms whose owner/manager has a higher education level than others are expected to be better able to manage their affairs, prepare financing proposals, and tap into advice and networks. In line with our intuition, we expect higher education levels on the part of owners/managers to result in fewer obstacles.

4.2.6 Legal status

A study by Gamage and Sadoi (2013) argues that entrepreneurs choose ownership structures to a large extent to support their efforts to obtain adequate financing. Firms with an ownership structure in which loan repayment hinges on one person, such as sole-proprietorship enterprises, are considered high risk and therefore could be expected to face more obstacles than firms – such as partnerships and listed firms – with ownership structures in which the responsibility for loan repayments is spread across several owners. Furthermore, firms with partnership-style ownership structures have higher information and accountability requirements and, therefore, could be expected to face fewer obstacles.

However, the empirical evidence is inconclusive. While Beck et al. (2004) found ownership structure to be significant, Canton et al. (2012) concluded that the ownership structure of a firm is not systematically related to perceived credit constraints.

4.2.7 Financial statement

If information asymmetry is a leading cause of obstacles to financing, it should follow that firms in possession of better information would suffer less from such obstacles than those with poorer information. A checked and certified financial statement by an external auditor could be used as proxy for having better information. According to Gamage and Sadoi (2013), an acceptable audited financial statement improves borrowers' credibility and reduces risks for lenders.

4.3 Empirical study

4.3.1 Source of data

For the firm-level data, we first use the World Bank Enterprise Survey (WBES) database for six small developing CARICOM states, including Suriname. The total number of observations is 1,363. The data collection took place in 2011 as part of the 2010 Latin America and Caribbean (LAC) Enterprise Survey Initiative of the World Bank.

The Enterprise Survey aimed to capture business perceptions on the biggest obstacles to enterprise growth, the relative importance of various constraints to increasing employment and productivity, and the effects of a country's business environment on its international competitiveness, through interviews with firms in the manufacturing and services sectors (World Bank, 2010, p. 1).

Access to finance forms one pillar of this survey. The target group of the survey was the non-agriculture private sector of the formal economy. Establishments with fewer than five persons and fully government-owned firms were excluded (World Bank, 2009).

Additionally, we use data from the 2014 PROTEqIN survey to measure obstacles to financing in the same six Caribbean countries, including a total of 1,067 observations. The PROTEqIN survey was conducted by the IDB in collaboration with Compete Caribbean, and it uses the same methodology as the WBES. As in the World Bank survey, firms with fewer than five persons and fully government-owned firms were excluded (Compete Caribbean, 2014).

4.3.2 Variables description

A detailed description of the selected variables and their respective measurement in both surveys is presented in Table 4.1.

Table 4.1: Model variables and their measurement

	World Bank Dataset	**PROTEqIN Dataset**
Dependent Variable		
Obstacle	Obstacle is derived from the question: "Is access to finance, which includes availability and cost, interest rates, fees, and collateral requirements, No Obstacle (0), a Minor Obstacle (1), a Moderate Obstacle (2), a Major Obstacle (3), or a Very Severe Obstacle (4) to the current operations of this firm?"	Obstacle is derived from the question: "Please rate each one of these factors as obstacles that can affect the current operations of your establishment: No Obstacle (0), a Minor Obstacle (1), a Moderate Obstacle (2), a Major Obstacle (3), or a Very Severe Obstacle (4)"
Independent Variables		
Sector (Sector)	In both surveys, we collapse Sector into two categories – namely, Manufacturing (1) and Services (2).	
Size (Size)	The WBES, as well as the PROTEqIN survey, used the following sizes, based on full-time employees: 1 = Small >=5 and <=19; 2 = Medium >=20 and <=99; 3 Large >=100 Micro firms (firms with employees <5) were not included in the surveys.	
Age (Age) Age squared (Age_sq)	Age is measured as the firm's years of operation. As Age appears to be non-linear (parabolic), we also included the Age-sq term in the model.	
Legal Status (Legal_Stat)	Legal Status was measured on the following scales:	Legal Status was originally measured as follows:

	1. Shareholding company with shares traded in the stock market; 2. Shareholding company with non-traded shares or shares traded privately; 3. Sole proprietorship; 4. Partnership; 5. Limited partnership; 6. Other. We collapse this variable into a binary variable in both databases, as we are interested in comparing shareholding companies with non-shareholding companies. 1–2 = 1 (Shareholding company) 3–6 = 0 (Non-shareholding company).	1. Shareholding company with shares traded in the stock market; 2. Shareholding company with non-traded shares or shares traded privately; 3. Sole proprietorship; 4. Partnership; 5. Limited partnership; 6. Foundation; 7. Union/association; 8. Other. We collapse this variable into a binary variable, as in the World Bank dataset. 1–2 = 1 (Shareholding company) 3–8 = 0 (Non-shareholding company).
Gender (Gender)	Gender is derived from the question: “Is the Top Manager female?” 1 = Yes 2 = No	Gender is derived from the question: “How would you characterize the gender composition of the owners/shareholders of this firm?” Gender was originally measured as follows: 1. All men; 2. Predominantly men; 3. Equally men and women;

		4. Predominantly women; 5. All women. We collapsed this variable into a variable with three categories: 0 = 1–2 (Men) 1 = 3 (Equally Men–Women) 2 = 4–5 (Women)
Education level (Edu)	No question was included on the education level of the Owner(s), Shareholders or Top Manager.	Average education level of Managers'. The following education levels were included: 1. Did not complete primary school; 2. Completed primary school; 3.Started but did not complete secondary school; 4. Completed secondary school; 5. Started but did not complete college/vocational training; 6. Completed college/vocational training; 7. Did not complete university; 8. University Graduate; 9. Post-graduate (Master's, Ph.D.); 10. Other, please specify. We collapsed this variable into three categories. 1–4 = 1 (Low) 5–7 = 2 (Middle)

		8–9 = 3 (High)
Financial Statement (Fin_Stat)	In both datasets, this variable is derived from the question: “Are financial accounts of this firm being audited by an external auditor?” 0 = No 1 = Yes	
Country (Country)	0 = Suriname 1 = Trinidad and Tobago 2 = Jamaica 3 = Barbados 4 = Belize 5 = Guyana	

Source: World Bank (2010) and PROTEqIN (2014).

Table 4.2. Statistical summary of the selected variables (rounded numbers)

		World Bank Dataset			PROTEqIN Dataset		
	Variables	No. of Observations Before data imputation	No. of Observations After data imputation	Percent	No. of Observations Before data imputation	No. of Observations After data imputation	Percent
Obstacle*	No obstacle	280	280	20	176	176	17
	Minor obstacle	284	284	21	268	268	25
	Moderate obstacle	323	328	24	319	320	30
	Major obstacle	323	326	24	214	215	20
	Very severe obstacle	145	145	11	88	88	8
	Total	1355	1363	100	1065	1067	100
Sector	Manufacturing	859	859	63	431	431	40
	Services	504	504	37	636	636	60
	Total	1363	1363	100	1067	1067	100
Size	Small	508	508	37	419	419	39
	Medium	580	580	43	427	427	40
	Large	275	275	20	221	221	21
	Total	1363	1363	100	1067	1067	100
Gender*	(Mostly) Female	233	233	17	164	159	15
	(Mostly) Male	1116	1130	83	694	699	65
	Equally Female and Male				209	209	20
	Total	1349	1363	100	1067	1067	100
Age*	Age	1327	1363	100	1037	1067	100
	Age squared	1327	1363	100	1037	1067	100
Legal status*	Shareholding company	432	433	32	385	385	36
	Non-Shareholding company	928	931	68	671	682	64

	Total	1360	1363	100	1056	1067	100
Financial statement*	Yes	309	312	23	813	813	76
	No	1026	1051	77	254	254	24
	Total	1335	1363	100	1067	1067	100
Education level*	Low	--------			185	185	17
	Middle				454	460	43
	High				417	422	40
	Total				1065	1067	100

Source: Author's calculations based on World Bank (2010) and PROTEqIN (2014) databases.

* Annex 4.3 provides a detailed description of data-imputation methods.

Obstacle

In Table 4.2, we present the variables in terms of the number of observations and the percentage share of the subcategories within a variable in both databases.

In the World Bank survey, 59 percent of the firms indicated experiencing moderate to very severe obstacles to financing; in the PROTEqIN database, 58 percent of the firms did so.

When examining obstacles to financing on a country level, in the WBES, firms reporting moderate to severe obstacles – as a percentage of their number of observations – in descending order are located in Belize (81 percent), Suriname (63 percent), Trinidad and Tobago (59 percent), Barbados (58 percent), Jamaica (56 percent), and Guyana (41 percent) (Annex 4.1). In the PROTEqIN survey (Annex 4.2) the descending order is as follows Belize (76 percent), Trinidad and Tobago (66 percent), Jamaica (56 percent), Guyana (54 percent), Barbados (51 percent), and Suriname (36 percent).

Sector

In the World Bank database, most of the firms are operating in the manufacturing sector (63 percent), while 37 percent operate in the services sector. Conversely, in the PROTEqIN database, most firms operate in the services sector (60 percent), followed by 40 percent in the manufacturing sector.

In the World Bank dataset as well as in the PROTEqIN dataset, Trinidad and Tobago along with Jamaica have the highest share in the manufacturing and services sectors (Annexes 4.1 and 4.2).

Size

In both datasets, the majority of the firms are medium size: in the World Bank dataset 43 percent and in the PROTEqIN 40 percent. Most of these medium-sized firms are located in Trinidad and Tobago and Jamaica (Annexes 4.1 and 4.2).

Gender

Firms were asked to report the gender composition of their top management in the WBES, and the gender of the owner or shareholders in the PROTEqIN survey. In both databases, we have a predominant share of men in the top. In the World Bank database, 17 percent are female and 83 percent male. The greatest number of male-led firms are in Trinidad and Tobago and Jamaica. In the PROTEqIN dataset, 15 percent of the firms have a female owner or manager, 65 percent a male one, and 20 percent have a balanced gender composition. Most of the balanced-gender firms are located in Jamaica, Belize and Trinidad and Tobago (Annex 4.2).

Age

In both databases, most firms are older than 20 years (World Bank: 50 percent; PROTEqIN: 56 percent). The second-largest group in both databases (18 percent) corresponds to the age range 11–15 years.

Legal Status

In the World Bank database, 68 percent of the firms are non-shareholding companies, while in the PROTEqIN database, their share is 36 percent. The most non-shareholding companies in both databases are located in Trinidad and Tobago and Jamaica (Annexes 4.1 and 4.2).

Financial statement

Firms were also asked to report whether they contract a certified external auditor to check their annual financial statements. In the World Bank dataset, 23 percent and in the PROTEqIN dataset 76 percent of the firms responded in the affirmative. In the World Bank dataset,

Suriname and Jamaica have the largest share of firms with financial statements checked by a certified external auditor, while in the PROTEqIN dataset, Trinidad and Tobago and Jamaica have the highest share in this regard (Annexes 4.1 and 4.2).

Education level of managers

In the PROTEqIN dataset, most of the firms report a management team with a middle education level (43 percent) and high education level (40 percent) (Table 4.2). Most of the firms with a high education level are located in Trinidad and Tobago (59 percent) followed by Jamaica (13 percent). On the other hand, the largest share of firms with a management team with a low education level are located in Guyana (23 percent) and Suriname (22 percent) (Annex 4.2).

4.3.3 Correlations

Tables 4.3 and 4.4 depict the correlation coefficients between obstacles to financing and various characteristics of firms and country dummies.

Table 4.3: Correlation matrix based on World Bank data

	Obst	Sect	Fins	Sizecat2	Sizecat3	Legalst	AGE	Gen	Councat1	Councat2	Councat3	Councat4	Councat5
Obstacle	1.000												
Sect	-0.097*	1.000											
Finst	-0.016	0.009	1.000										
Sizecat2	0.024	-0.097*	0.133*	1.000									
Sizecat3	-0.044	-0.098*	0.067*	-0.119*	1.000								
Legalst	-0.048	0.091*	0.192*	-0.012	0.086*	1.000							
AGE	-0.086*	0.044	0.201*	0.072*	0.149*	0.146*	1.000						
Gen	0.077*	-0.035	-0.034	0.014	0.075*	0.042	0.069*	1.000					
Councat1	-0.099*	0.506*	0.121*	-0.024	-0.015	0.235*	0.048	0.037	1.000				
Councat2	0.017	-0.189*	-0.091*	0.118*	-0.033	-0.003	0.017	0.027	-0.155*	1.000			
Councat3	0.066*	0.210*	-0.063*	-0.022	-0.021	-0.208*	0.037	-0.022	-0.533*	-0.081*	1.000		
Councat4	-0.022	-0.538*	-0.044	0.023	0.016	-0.036	-0.108*	-0.032	-0.441*	-0.067*	-0.232*	1.000	
Councat5	0.159*	-0.322*	-0.058*	-0.063*	-0.014	-0.077*	-0.036	-0.019	-0.264*	-0.040	-0.139*	-0.115*	1.000

Source: Author's calculations based on World Bank (2010) database.

Legend: Sizecat2 = medium-sized firms; Sizecat3 = large firms; Councat1 = Trinidad & Tobago; Councat2 = Jamaica; Councat3 = Barbados; Councat4 = Belize; Councat5 = Guyana.

Table 4.4: Correlation matrix based on PROTEqIN dataset

	Obst	Sect	Fins	Size2cat1	Size2cat2	Legalst	AGE	Educat1	Educat2	Genrcat1	Genrcat2	Councat1	Councat2	Councat3	Councat4	Councat5
Obstacle	1.000															
Sect	-0.017	1.000														
Finst	-0.140*	-0.044	1.000													
Size2cat1	0.114*	0.110*	-0.215*	1.000												
Size2cat2	-0.099*	-0.060*	0.195*	-0.867*	1.000											
Legalst	-0.045	0.002	0.207*	-0.119*	0.060*	1.000										
AGE	-0.074*	-0.045	0.191*	-0.257*	0.180*	0.155*	1.000									
Educat1	0.082*	0.033	-0.116*	-0.055	0.063*	-0.267*	-0.107*	1.000								
Educat2	-0.112*	0.032	0.133*	0.022	-0.047	0.220*	0.119*	-0.753*	1.000							
Genrcat1	-0.004	-0.006	0.060*	0.039	-0.019	0.097*	0.054	0.051	-0.048*	1.000						
Gencat2	0.025	0.032	-0.027	0.013	-0.016	0.055	-0.024	-0.070*	0.072*	-0.665*	1.000					
Councat1	-0.027	0.061*	0.152*	0.076*	-0.067*	0.253*	0.100*	-0.480*	0.527*	-0.118*	0.149*	1.000				
Councat2	-0.060*	-0.158*	-0.021	-0.025	0.021	0.041	-0.003	0.009	-0.109*	-0.013	0.002	-0.147*	1.000			
Councat3	0.028	0.026	-0.103*	-0.020	0.054	-0.246*	-0.016	-0.345*	-0.300*	-0.088*	0.081*	-0.571*	-0.102*	1.000		
Councat4	-0.056	0.025	-0.047	-0.044	0.030	-0.047	-0.094*	0.161*	0.189*	-0.048	0.049	-0.368*	-0.066*	-0.256*	1.000	
Councat5	0.176*	-0.012	-0.047	0.056	-0.050	-0.056	-0.038	0.146	0.163*	-0.021*	-0.090*	-0.230*	-0.041	-0.160*	-0.103*	1.000

Source: Author's calculations based on PROTEqIN (2014) database.

Legend: Sizecat2 = medium-sized firms; Sizecat3 = large firms; Educat1 = middle education level; Educat2 = high education level; Genrcat1 = mostly women; Genrcat2 = mostly men; Councat1 = Trinidad & Tobago; Ccouncat2 = Jamaica; Councat3 = Barbados; Councat4 = Belize; Councat5 = Guyana.

The matrixes indicate sufficient correlation between the dependent variable (Obstacle) and the various independent variables to proceed with a multivariate analysis. Multicollinearity does not seem to be a problem in the datasets. Multicollinearity saps the statistical power of an analysis and can cause coefficients to switch signs, making it more difficult to specify the correct model (Belsley, Kuh, & Welsch, 1980).

4.3.4 The models

In this section, we assess which firm and country characteristics explain variations in obstacles to financing by conducting a multivariate analysis. We use two different models to conduct the analysis. We estimate first an ordered probit model, and then an ordered logistic model. The latter is used to examine the robustness of the results produced by the ordered probit model. The outcomes of these two models should not be significantly different.

Ordered probit and logit models

The depended variable Obstacle, denoted by (Y_i), has five ordered possible outcomes (0 = No Obstacle; 1 = Minor Obstacle; 2 = Moderate Obstacle; 3 = Major Obstacle; 4 = Very Severe Obstacle). An ordered regression is usually presented as a latent-variable model with the following (Long & Freese, 2014):

$$\gamma^*_i = x_i\beta + \varepsilon_i \qquad \textit{Equation 1}$$

Where: γ^*_i is the latent variable, ranging from $-\infty$ to ∞; we assume k0=$-\infty$ and Kj=∞

- i is an index denoting each firm;
- x_i is a vector containing all identified explanatory variables;
- β is a vector of parameters; and
- ε_i is the random error term following a standard normal distribution in the probit model and a standard logistic distribution in the logit model.

Because the latent variable is unobserved, standard regression techniques cannot be applied. Therefore, a measurement equation is used to link the observed variable Y_i and the

continuous latent variable γ^*_i; given that the observed depended variable has several outcomes, the measurement equation has the following structure:

$$\left.\begin{array}{l} Y = 0\ (No\ Obstacle)\ if\ k0 = -\infty \leq \gamma^* i < k_1 \\ Y = 1\ (Minor\ Obstacle)\ if\ k_1 \leq \gamma^* i < k_2 \\ Y = 2\ (Moderate\ Obstacle)\ if\ k_2 \leq \gamma^* i < k_3 \\ Y = 3\ (Major\ Obstacle)\ if\ k_3 \leq \gamma^* i < k_4 \\ Y = 4\ (\text{Very Severe Obstacle})\ if\ k_4 \leq \gamma^* i < k_5 = \infty \end{array}\right\} \quad \textit{Equation 2}$$

The parameters k_j, with j being 0…4, are known as "cut-points," or sometimes "threshold parameters." The probability, *P*, that a firm experiences one of the obstacle levels is:

$$\begin{cases} P\ (Y = 1) = \emptyset(-\beta X_i) \\ P(Y = x_{n-1}) = \emptyset\ (k_{j-1} - \beta X_i) - \emptyset\ (k_{j-2} - \beta X_i) \\ P\ (Y = x_n) = 1 - \emptyset\ (k_j - \beta X_i) \end{cases} \quad \textit{Equation3}$$

Where:

- x is equal to the probability that a firm experiences one of the levels of obstacles to financing;
- n gives the integral order of the depended variable; and
- $\emptyset$ is the cumulative standard normal distribution function in the ordered probit model and the normal logistic distribution function in the ordered logistic model.

For all the probabilities to be positive, the threshold values k_j must satisfy the restriction of $k_1 < k_2 < \cdots < k_j$. Computation of these probabilities allows an understanding of the effect of individual estimated parameters. It is clear from Equation 3 that a positive value of β_i implies that an increase in X_i will generate the increase (respectively, decrease) of the probabilities of the highest (respectively, lowest) ordered obstacle-to-financing levels.

The estimated coefficients of the ordered probit and logistic models only indicate the probability that an event will occur but do not indicate the magnitude of that event. For this reason, marginal effects are also computed as they reflect the change in the probability of the

reference category of the depended variable given a unit change in X. The computed marginal effects have the following structure:

$$\frac{\partial p_{ij}}{\partial x_{ij}} = \{\emptyset'\left(k_{j-1} - \beta X_i\right) - \emptyset\left(k_j - \beta X_i\right)\}\beta_r \qquad \textit{Equation 4}$$

Empirical model

The empirical model estimated based on the World Bank database is as follows:

$$Obstacle = \alpha_0 + \beta_1 Sector + \beta_2 Size + \beta_3 Gender + \beta_4 Age + \beta_5 Age\_sq + \beta_6 Legalstat + \beta_7 Finstat + \beta_8 Country + \varepsilon_i \qquad \textit{Equation 5}$$

The empirical model estimated based on the PROTEqIN database has the following structure:

$$Obstacle = \alpha_0 + \beta_1 Sector + \beta_2 Size + \beta_3 Gender + \beta_4 Age + \beta_5 Age\_sq + \beta_6 Legalstat + \beta_7 Finstat + \beta_8 Edu + \beta_9 Country + \varepsilon_i \qquad \textit{Equation 6}$$

4.4 Model results and discussion

In general, the results from the estimated ordered probit and ordered logistic regression models show that obstacles to financing are mainly driven by factors such as the sector in which a firm is operating; the firm's age, gender profile, financial statements; the education level of its managers; and country specifics (Annexes 4.4 and 4.5). The results of both regression models are more or less the same in terms of signs of parameters and their significance levels. This indicates that the regression results of the ordered probit models are robust.

We use marginal effects to quantify the probability or likelihood that a firm experiences obstacles to financing. The results from the two models in terms of marginal effects are presented in Tables 4.5 and 4.6.

We find that firms operating in the manufacturing sector experience, on average, more obstacles to financing than those operating in the services sector. Firms operating in the former sector are 4.8 percentage points (when using the World Bank database) more likely to experience severe obstacles to financing than those in the latter. When using the PROTEqIN database, firms in the manufacturing sector are found to be 1.6 percentage points more likely to experience severe obstacles to financing. These results are in line with Hall et al. (2000). The outcome is statistically significant, at 1 percent, when using the World Bank database but insignificant when using the PROTEqIN figures.

Contrary to the existing literature (see, for example, Beck et al., 2006; Berger et al., 2011; and Dong and Men, 2014), we fail to find any significant relationship between firm size and obstacles to financing when using the World Bank database. On the other hand, when using the PROTEqIN database, we only find statistical evidence that small firms experience more obstacles to financing than medium-size ones, which is in line with the three sources cited above. The probability that a firm will experience severe obstacles to financing decreases by 1.6 percentage points when it moves from small to medium-sized. One possible explanation for this outcome is that, unlike small firms, medium-sized firms do not face challenges in accessing external finance because they may have adequate collateral or be able to prove themselves creditworthy. The result for the medium-sized firm is statistically significant at 10 percent significance level, while the outcome for large firms is statistically insignificant.

Age of firm is a statistically significant determinant of obstacles to financing in both models. The results point to older firms experiencing fewer such obstacles than younger ones. According to Berger and Udell (1995); Boot (2000); Degryse and Van Cayseele (2000); Kira (2013); and Beck et al. (2004) – who all find similar results – younger firms lack experience and adequate collateral, which are essential determinants of access to finance. The study finds that a one-year increase in the age of a firm results in a decrease in the likelihood of it experiencing severe financial constraints of 0.2 percentage points when using World Bank data, and 0.1 percentage points when using PROTEqIN data. The statistical significance and the change in sign in the "Age_sq" variable indicate that there is a significant non-linear relationship between age and obstacles to financing. This implies that a firm's likelihood of experiencing such obstacles has a turning point.

Further, when using the World Bank database, we fail to find a statistically significant relationship between the presence of financial statements and obstacles to financing, while, using the PROTEqIN database, we find a significant negative relationship between the two. Specifically, we find that firms with audited financial accounts are 3.4 percentage points less likely to experience severe obstacles to financing than their non-audited counterparts. This outcome supports the view of Gamage (2013) that firms in possession of good information suffer less from obstacles to financing than others with poorer information.

Using both databases, we conclude that women-led firms are more likely to experience obstacles to financing than men-led firms. These findings are in line with Moore et al. (2017), who find evidence that in comparison with male-led firms, enterprises with predominantly female managers in the Caribbean region – including Suriname – experience more obstacles to financing. This outcome also supports the view of gender discrimination found by Asiedu et al. (2013). The results using the World Bank data indicate that female-led firms are 3.9 percentage points more likely than their male-led counterparts to be financial constrained. Gender is not found to be significant when using the PROTEqIN database.

In terms of education level, firms with managers who have a middle or a high education level are less likely to experience obstacles to financing than those with more poorly educated upper echelons. When managers move from a low education level to a middle or high one, the probability that their firm will experience such obstacles decreases by 0.6 and 3.6 percentage points respectively.

The legal status of the firms- shareholding counterparts vs. non-shareholding companies- is not significant in any of the models.

When using both databases, we find mixed results for the country dummies. In comparison with the other CARICOM countries, when using the World Bank database, firms located in Belize experience more severe obstacles to financing than those in Suriname, while Guyanese firms experience less severe obstacles than those in Suriname. Those results are significant at 5 percent level. When using the PROTEqIN database, we find that firms in Belize, Jamaica, and Trinidad and Tobago experience much more severe obstacles to financing than do their equivalents located in Suriname. These results are significant at 1 percent level.

Table 4.5: Oprobit regression results based on WBES data set (marginal effects at means)

VARIABLES	(0) No Obstacle	(1) Minor Obstacle	(2) Moderate Obstacle	(3) Major Obstacle	(4) Very Severe Obstacle
Sector	0.078***	0.029***	-0.004	-0.055***	-0.048***
	(0.026)	(0.010)	(0.002)	(0.018)	(0.016)
Size (*Ref = Small*)					
Medium	-0.026	-0.011	0.000	0.019	0.018
	(0.019)	(0.008)	(0.004)	(0.013)	(0.014)
Large	0.051	0.015	-0.006	-0.034	-0.026
	(0.047)	(0.012)	(0.010)	(0.030)	(0.021)
Age	0.003***	0.001***	-0.000	-0.002***	-0.002***
	(0.001)	(0.000)	(0.000)	(0.001)	(0.000)
Age_sq	-0.000*	-0.000*	0.000	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin_stat	-0.010	-0.004	0.000	0.007	0.006
	(0.020)	(0.007)	(0.001)	(0.014)	(0.012)
Gender	-0.063***	-0.024***	0.003	0.045***	0.039***
	(0.020)	(0.008)	(0.002)	(0.014)	(0.012)
Legal_status	0.004	0.001	-0.000	-0.003	-0.002
	(0.018)	(0.007)	(0.001)	(0.013)	(0.011)
Country *(Ref = Suriname)*					
Trinidad & Tobago	-0.008	-0.003	0.001	0.005	0.004
	(0.060)	(0.020)	(0.005)	(0.042)	(0.033)

Jamaica	-0.072	-0.031	-0.001	0.052	0.052
	(0.055)	(0.024)	(0.010)	(0.039)	(0.042)
Barbados	0.056	0.014	-0.009	-0.036	-0.025
	(0.065)	(0.015)	(0.014)	(0.041)	(0.027)
Belize	-0.130***	-0.070**	-0.022	0.093***	0.129**
	(0.047)	(0.029)	(0.026)	(0.032)	(0.062)
Guyana	0.175*	0.025	-0.042	-0.101**	-0.056**
	(0.095)	(0.017)	(0.032)	(0.048)	(0.026)
Observations	1,363	1,363	1,363	1,363	1,363

Source: Author's computation using the World Bank database.

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

Table 4.6: Oprobit regression results based on PROTEqIN (marginal effects at means)

Independent Variables	(0) No Obstacle	(1) Minor Obstacle	(2) Moderate Obstacle	(3) Major Obstacle	(4) Very Severe Obstacle
Sector	0.025	0.024	-0.008	-0.027	-0.016
	(0.016)	(0.016)	(0.005)	(0.018)	(0.011)
Size (*Ref = Small*)					
Medium	0.027*	0.025*	-0.009	-0.028*	-0.016*
	(0.014)	(0.013)	(0.006)	(0.015)	(0.009)
Large	0.011	0.013	-0.004	-0.014	-0.009
	(0.026)	(0.026)	(0.009)	(0.029)	(0.017)
Age	0.003***	0.001*	-0.000*	-0.001*	-0.001*
	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
Age_sq	-0.000**	-0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fin_stat	0.046***	0.053***	-0.017***	-0.058***	-0.034***
	(0.015)	(0.015)	(0.006)	(0.017)	(0.010)
Gender *(Ref = Equally Female and Male)*					
Mostly Women	-0.006	-0.003	0.001	0.003	0.002
	(0.016)	(0.017)	(0.005)	(0.018)	(0.011)
Mostly Men	0.030	0.024	-0.010	-0.028	-0.015
	(0.024)	(0.021)	(0.010)	(0.024)	(0.013)
Edu *(Ref = Low)*					

Middle	0.004	0.009	-0.001	-0.009	-0.006
	(0.016)	(0.021)	(0.002)	(0.021)	(0.015)
High	0.042**	0.054***	-0.017***	-0.060***	-0.036**
	(0.018)	(0.020)	(0.006)	(0.021)	(0.014)
Legal_status	-0.006	-0.005	0.002	0.006	0.003
	(0.014)	(0.014)	(0.004)	(0.015)	(0.009)
Country *(Ref = Suriname)*					
Trinidad & Tobago	-0.176**	-0.085***	0.076**	0.117***	0.052***
	(0.074)	(0.019)	(0.037)	(0.035)	(0.014)
Jamaica	-0.173**	-0.067***	0.071*	0.097***	0.040***
	(0.074)	(0.019)	(0.037)	(0.036)	(0.013)
Barbados	-0.127*	-0.031*	0.049	0.053	0.019
	(0.077)	(0.018)	(0.039)	(0.036)	(0.012)
Belize	-0.252***	-0.200***	0.044	0.221***	0.166***
	(0.071)	(0.031)	(0.039)	(0.038)	(0.039)
Guyana	-0.081	-0.012	0.026	0.025	0.008
	(0.092)	(0.022)	(0.047)	(0.044)	(0.014)
Observations	1,067	1,067	1,067	1,067	1,067

Source: Author's computation using the PROTEqIN database.

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

4.5 Conclusions, implications, and limitations

Given the pivotal role of SMEs in driving economic growth and job creation, this study aims to investigate the factors that cause these firms to experience obstacles to financing. Access to external finance is a key determinant of a firm's ability to maintain and expand production. We pooled data from six small developing states in the Caribbean (Suriname, Barbados, Belize, Guyana, Jamaica, and Trinidad and Tobago) from the 2010 World Bank Enterprise Survey (WBES) database and the 2014 PROTEqIN survey database in order to conduct a quantitative analysis of obstacles to financing. Besides the estimation of our model based on surveys conducted in two different years, we also used an ordered probit model as well as an ordered logistic model to ensure the robustness of our results.

In general, obstacles to financing are mainly driven by factors such as the sector in which a firm is operating; the firm's age, size, gender profile, financial statements; the education level of its managers. On the other hand, we failed to find statistical evidence on whether a firm's legal status matters in experiencing such obstacles. We specifically established the fact that firms operating in the manufacturing sector experience, on average, more obstacles to financing than those in the services sector. Small firms tend to experience more such obstacles than medium-sized ones. Furthermore, older firms experience fewer obstacles than their younger counterparts. Firms that engage external auditors to audit their financial accounts are less likely than those that do not to experience severe obstacles to financing. We also found evidence to support the view that women-led enterprises are more likely to experience obstacles than men-led firms. Additionally, managers who have a middle or a high education level experience fewer obstacles to financing than those with a low education level. The results for firms' experiencing obstacles to financing on a country level are mixed.

Based on the results, we recommend that in designing financial policies aimed at enhancing access to finance for firms, policymakers focus on companies in the manufacturing sector, younger, and woman-led firms. On the other hand, we recommend that firms have their financial accounts audited, as this will decrease the probability of experiencing obstacles to financing. Since education level matters for access to finance, firms should appoint well-educated managers or invest in their managers' education, as this will decrease the probability of experiencing obstacles to financing.

Limitations

The WBES and PROTEqIN databases have several limitations, which should be taken into account when interpreting the results. Furthermore, these limitations suggest a need for further research regarding the determinants of obstacles to SME financing in the Caribbean.

First, the WBES as well as the PROTEqIN database excludes micro firms, while this category of firms constitutes a large part of the firm population in the Caribbean. Furthermore, in the category micro firms, a distinction has to be made between profit-oriented and "survival" firms, as pointed out by Berner et al. (2008), as both categories of firms have different motives, which in turn have implications for any policy design aimed at improving access to finance. Second, the agriculture sector is excluded, while this sector might experience specific obstacles to financing in addition to those of the other sectors. Third, ethnicity, religion, and networks are not included in the surveys, while these are potential determinants of obstacles to firms' financing (see Chapter 5) – especially in a small-state context. Fourth, the surveys were mainly executed in the capital cities of the countries, whereas the results for particular sectors, for instance, might differ from district to district and this narrow focus might induce a bias in the surveys. The findings of the surveys are thus not likely to be representative of the whole country in each case.

Chapter 5: Obstacles to MSME Financing in Suriname from a firm perspective

Evidence from a Unique Firm-level Survey of Paramaribo

5.1 Introduction

A growing body of literature points towards the merits of access to external finance for micro, small, and medium-sized size firms (MSMEs). These firms need working capital to sustain production and investment capital to expand production. Both types of capital could be financed either by internal sources – that is, cash flow and retained earnings – or by external sources, banks or otherwise. Numerous studies have confirmed the fact that obstacles in accessing external finance deter production, impede investments (Mankiw, 1986; Hubbard, 1998), and hamper the growth potential of firms (Beck et al., 2007; Cole & Sokolyk, 2016). In this context, a proper investigation of the determinants of obstacles to financing is essential for policies aimed at stimulating access to finance and, thus, economic activity.

While the existing literature has explored several determinants of obstacles to financing, others have been overlooked or have received little attention thus far. In addition, such determinants have not been explicitly or systematically explored for Suriname at all. Hence, policymaking aimed at reducing the obstacles to financing faced by firms may run the risk of relying on findings from other countries, which might not resonate fully with the Surinamese context. The few available studies in Suriname – all of a qualitative nature – show that MSMEs face obstacles in accessing external finance, but, to the best of our knowledge, no quantitative studies have been conducted on this issue. Filling this void is one of the objectives of this dissertation.

In a qualitative study undertaken at the behest of the Surinamese Government, Drum (2012) identified several supply-side and demand-side impediments to accessing credit faced by small and medium-sized firms (SMEs). The same study also highlighted the following issues: a heavy reliance on collateralized borrowing, with real estate constituting almost the only type of collateral accepted by lenders; inadequate sharing of credit information; a bias in commercial bank lending in favor of larger borrowers; and insufficient financial-reporting regulations and practices. Furthermore, the World Economic Forum and the World Bank

persistently conclude that entrepreneurs in Suriname experience access to credit as one of the main obstacles to doing business there. Also, in Chapter 4 of this dissertation, we found sector, size, age of firm, and legal status to be statistically significant determinants of demand-side obstacles to financing, using pooled secondary data from selected CARICOM (Caribbean community) countries including Suriname.

In this chapter, we present a quantitative assessment of the determinants of obstacles to financing based on a unique firm-level survey of the obstacles facing MSMEs undertaken in Paramaribo, the capital city of Suriname, within the context of this dissertation entitled "Obstacles to Financing facing Micro, Small, and Medium-Sized Firms in Suriname." We test the determinants of such obstacles to financing – including those that have been excluded or under-researched in other studies – for the first time in the Surinamese context, using the firm-level survey. Novel determinants include ethnicity, religion, networks, gender, and education. Notably, in a multi-ethnic society, such as Suriname, excluding ethnicity and religion as causes in studying obstacles to financing might lead to an omitted variable bias. We also investigate traditional mainstream determinants, which include sector (manufacturing, construction, trade, and services); size of firm (micro, small, and medium); age of firm; legal status (shareholding versus non-shareholding firms); and audited financial statement.

One major weakness of the World Bank Enterprise Survey (WBES) and Inter-American Development Bank PROductivity, TEchnology, and INnovation (PROTEqIN) surveys conducted in Suriname is their omission of micro firms – actually the largest category of firm in the country. Furthermore, both surveys focused on formal-sector firms. However, as described in Chapter 1, "survival entrepreneurs" – micro firms that exist not to make a profit but due to a failure to secure wage employment, and which operate largely in the informal economy – are of a different nature to formal growth-oriented firms. As such, their financing sources could differ from those of their formal-sector counterparts – as could their perception of obstacles to finance. In our sample data, we include micro, small and medium-sized firms in the formal as well as the informal sector, and thus capture these survival firms.

Within the context of the empirical assessment of the determinants, we designed a firm-level survey reflecting the specific characteristics of Suriname. It aimed at collecting information

on firms' opinions and experiences regarding obstacles to financing encountered in Paramaribo, and followed the aforementioned WBES (World Bank, 2010) and Inter-American Development Bank (IDB, 2014) and Compete Caribbean PROTEqIN surveys. However, we have included novelties such as micro firms, more sectors, a network block, and certain specific factors such as ethnicity and religion. The focus solely on Paramaribo is motivated by the fact that almost half of Suriname's firm population (48 percent) is located in the capital (General Bureau of Statistics [GBS], 2016) and by cost considerations.

Our methodology of relying on self-reporting by firms has the advantage that we receive information from the source of information and do not have to draw conclusions from indirect sources. On the other hand, relying on self-reporting firms carries the risk that firms reporting obstacles to financing are, in principle, not credit-constrained. However, a study by Beck et al. (2006) confirms that firms reporting obstacles to financing tend to be growth-constrained. More recently, Kuntchev, Ramalho, Rodríguez-Meza, and Yang (2014) confirm that firms are more likely to report access to finance as an obstacle if they are credit-constrained in reality. We follow Beck et al. (2006) in referring to self-reported financing constraints as obstacles to financing.

Based on descriptive statistics, we conclude that firms in Paramaribo primarily use internal resources, commercial banks, and private capital to finance their working capital and fixed assets. Of these, commercial banks are the most important source of external financing. Overall, almost 53 percent of firms experience access to finance as an obstacle to their current operations to some extent. Finally, firms do believe that public-policy measures such as business-support centers and financial education could have a positive impact on access to finance.

Based on the multivariate probit models, we conclude that the following factors form significant determinants of obstacles to financing:

- Sector: manufacturing, construction, and trade vis-a-vis services are more likely to experience obstacles to financing.
- Age: older firms are less likely to experience obstacles to financing.
- Legal status: non-shareholding firms are more likely to experience obstacles to financing than shareholding firms.

- Ethnicity: Creole, Indian, Javanese and “Other” (including Maroons) finance seekers are less likely to experience obstacles to financing.
- Religion: Muslims vis-a-vis Christians are less likely, while the category Other religion is more likely, to experience obstacles to financing.
- Network: greater levels of networking result in experiencing fewer obstacles to financing.

In the remainder of this chapter, we first present the determinants of obstacles to external financing – which in turn have guided the structure of the survey. We then discuss the survey itself, starting from its development up to the results obtained, followed by a descriptive analysis and the probit-model estimations. We conclude with a summary of the main findings, implications, and suggestions for further research.

5.2 Determinants of obstacles to external financing for firms

This section relies partially on Chapter 4 of this dissertation, in which we assess the determinants of obstacles to financing encountered in selected CARICOM countries, including Suriname, using pooled secondary data from the WBES and the PROTEqIN datasets. As we have seen, micro firms, including survival firms, were excluded from both these surveys; we aim to bridge this gap.

As mentioned in Chapter 4, various studies report several determinants of the obstacles to external financing that firms face – such as sector (for instance, manufacturing vs. services); size (micro, small, medium, and large); age (old vs. new firms); ownership (domestic vs. foreign-owned, family vs. non-family); and gender (male vs. female owners/managers). While we test those determinants in the Surinamese context, we include other potential determinants that have been excluded from other cross-country studies. These studies have tended to focus on a comparable dataset, which results in country-specific characteristics – such as ethnicity, religion, and networks – being overlooked. A case study allows us to delve deeper into the idiosyncrasies of a particular society.

Next, we discuss the potential determinants, which will guide the setup of the survey on which the probit-model estimations will be based. Furthermore, we discuss the theoretical and empirical findings on the various potential determinants and the rationale for considering those determinants in the Surinamese context. Finally, we formulate a hypothesis for each potential determinant.

5.2.1 Industrial sector

The sector in which a firm operates may be a determinant of obstacles to financing for various reasons (Hall, Hutchinson, & Michealas, 2000; Kumar & Francisco, 2005; Gamage, 2013; Kira, 2013). First, capital intensity differs across industrial sectors, which induces obstacles to financing. Firms in certain sectors require more credit than others in order to invest in equipment, machinery, buildings, labor, and raw materials and, hence, may encounter proportionately greater constraints than firms in other sectors. SMEs in the manufacturing

sector, for instance, require relatively greater investment in assets such as land, factory buildings, plant and machinery, and vehicles. In comparison, most of the SMEs in the service and retail sectors need fewer investments in fixed assets. Furthermore, some SMEs in the industrial sector have low demand for credit because they do not need loans and thus experience fewer obstacles. In addition, banks may favor firms in sectors with higher growth potential. Finally, banks may specialize in credit allocation to specific sectors, and therefore prefer those sectors – leading to obstacles for firms in other sectors.

The available empirical evidence on the sector as a determinant of financing obstacles is inconclusive. Various studies have found that it constitutes a significant determinant. A study by Hall et al. (2000) found that the manufacturing and services sectors are the strongest predictors of financing constraints. The same was confirmed in a study by Kira (2013), who used a sample of 1,933 firms located in five countries of the East Africa Community (EAC). In addition, in Chapter 4 of this dissertation, we found sector to be significant in explaining obstacles to financing in selected Caribbean countries. However, there are studies that have not found sector to be a significant predictor of financing obstacles – for example, Ferrando and Griesshaber (2011).

In Suriname, there is anecdotal evidence that banks are biased towards credit allocation to firms in the trade and services sectors. Furthermore, it should be noted that the country's banks were initially established as so-called trade-oriented banks, which primarily aimed at catering to the credit needs of those particular sectors, and are still reluctant to allocate credit to other sectors such as manufacturing and construction. In addition, commercial banks claim that the risk–reward relationship is generally relatively unfavorable when granting credit to production sectors, without credit-guarantee support from public funds. Therefore, it is relevant to include the manufacturing sector as one potential determinant of obstacles to financing. While for Suriname, the WBES only makes a distinction between the manufacturing and services sectors, we distinguish four subsectors – namely, manufacturing, construction, trade, and services – in order to assess this determinant on a more granular level.

Hypothesis I: The industrial sectors Manufacturing and Construction are more likely to encounter obstacles to financing than Trade and Services are.

5.2.2 Size

The size of a firm matters when accessing external finance. In general, smaller firms represent higher credit risks than larger ones due to the relatively inadequate quantity and quality of information on their economic and financial position and prospects (Beck et al., 2006). This is especially the case for younger small firms because financial institutions cannot make accurate assessments of their credit risk–reward relationship. Availability of eligible collateral is also an issue for small firms (Kira, 2013). Furthermore, smaller firms require smaller credit amounts, thus increasing the (monitoring) cost per unit of credit – typically, project-screening and monitoring costs – for banks; they also often lack adequate management skills, which lessens banks' interest in lending to smaller firms generally. Finally, survival enterprises in the micro-firm category are of a very different nature to more conventional profit-maximizing firms.

Several studies (Beck et al., 2006; Berger el al., 2011; Dong and Men, 2014) found that smaller firms experience more obstacles to financing than do larger ones. Besides, in Chapter 4 of this dissertation, we found "size" to be significant as a determinant for obstacles to financing in selected Caribbean countries. In Paramaribo, the overwhelming majority of firms belong to the micro, small, or medium-sized categories (in short, MSMEs). Therefore, it is natural to include this feature as a potential obstacle to financing. Furthermore, in the Surinamese context, it is crucial to define firm size correctly. One obvious empirical challenge is the absence of agreed criteria for dividing firms into various sizes.

Hypothesis II: Smaller firms are more likely than larger firms to encounter obstacles to financing.

5.2.3 Age

In general, younger firms experience relatively more obstacles to financing than older ones do (Berger & Udell, 1995; Boot, 2000; Degryse & Van Cayseele, 2000; Kira, 2013). Information and experience issues, coupled with inadequate collateral, are the primary source of such

obstacles. Younger enterprises lack credit history and experience in the industry, making credit-risk assessment difficult for financing institutions. By comparison with older firms, they also lack adequate data and skills for preparing business plans and financing proposals. Older firms have an established credit history and a proven record of accomplishment, which facilitates the assessment of risk–reward relationships by financing institutions. Finally, younger firms may face challenges in providing adequate collateral to banks, given that they will not yet have accumulated sufficient (tangible) assets for this purpose.

Using the survey data on a sample of over 10,000 firms from 80 countries from the World Bank Environment Survey, Beck et al. (2006) found the age of firms to be one of the determinants of obstacles to financing. Dong and Men (2014), using data from the WBES, confirm that younger firms tend to face more obstacles to financing in emerging markets. In addition, Kira (2013), with data from the WBES, confirmed that small and medium-sized enterprises faced more obstacles than their larger counterparts using a sample of 1,933 firms located within five countries of the East Africa Community (EAC). Finally, Canton et al. (2012), using survey data from 2005 and 2006 covering almost 5,000 SMEs in the European Union, concluded that older firms perceived access to external financing as being less problematic than younger ones did.

In Chapter 4 of this dissertation, we also confirmed “age” as a significant determinant of financing obstacles in selected Caribbean countries.

Against the backdrop of previous findings – and given the fact that new firms could be considered “fresh blood” for an economy, and thus be a focus for policymakers – the age of firms will be included as a potential determinant of obstacles to financing.

Hypothesis III: Younger firms are more likely than older firms to report obstacles to financing.

5.2.4 Ownership

Three aspects of ownership are associated with access to finance:

1. Legal ownership structure.
2. The issue of foreign vs. domestically owned firms.

3. The issue of family vs. non-family firms.

A study by Gamage (2013) argues that entrepreneurs largely choose ownership structures to support their efforts to obtain adequate financing. Firms with an ownership structure in which loan repayment hinges on one person, such as sole-proprietorship concerns, are considered high risk. They can be expected to face more obstacles than firms in which the responsibility for loan repayments is spread across several owners, such as partnerships and shareholding companies. Furthermore, firms with partnership-style ownership structures have higher information and accountability requirements and, therefore, could be expected to face fewer obstacles.

However, the empirical evidence is inconclusive. While Beck et al. (2006) found ownership structure to be significant, Canton et al. (2013) concluded that the ownership structure of a firm is not systematically related to perceived credit constraints.

Hypothesis IV: Non-shareholding companies are more likely than shareholding companies to report obstacles to financing.

Foreign firms are expected to have fewer difficulties in accessing finance than domestic ones because the former have broader and easier access to their parent company, including international sources of external financing. Therefore, those firms are expected to report lower levels of obstacles to financing.

Hypothesis V: Domestic firms are more likely than foreign firms to report obstacles to financing.

Ownership in terms of family firms versus non-family firms could also be a determinant of financing obstacles (Steijvers et al., 2008). There are two contending views on this issue. On the one hand, family firms are expected to experience fewer obstacles to financing than non-family firms if and when the governance and performance of the firm are better because family assets and reputation are at stake. A firm being family-run may lower the risk of moral hazard and therefore enhance access to finance. On the other hand, the governance and performance of family firms are expected to suffer from a lack of incentive if and when family members fail to take firm action in cases of mismanagement – the more so when the family is not a homogeneous group. When family members have diverging motives and competence,

moral hazard may increase, resulting in more obstacles to financing as compared with non-family firms.

In Suriname, the majority of private firms fall into the "family-run" category. This allows us to test the hypothesis of whether a family firm does in fact entail higher or lower risks. Neither the WBES nor the PROTEqIN survey included the distinction between family and non-family firms; in our questionnaire, this characteristic is explicitly included.

Hypothesis VI: Family firms are more likely than non-family firms to experience obstacles to financing.

We might not be able to include all three ownership variables in one model due to collinearity issues, and will decide to drop one or two variables following a multicollinearity test**.**

5.2.5 Gender

The gender of a firm's owner/manager is also a potential determinant of obstacles to financing. Structural differences between male- and female-owned firms, along with gender discrimination, account for the main reasons for women's lesser likelihood of using external debt finance (Wilson et al., 2007). However, empirical studies reach conflicting results, especially for gender-based discrimination in credit markets (Gamage, 2013). Micro firms, including survival enterprises, are especially likely to be owned by women, and should be included in surveys when testing gender as a potential determinant.

Asiedu et al. (2013) reported that female-owned firms in sub-Saharan Africa were more likely to be financially constrained than male-owned firms. The authors used data from 34,342 firms from 90 developing countries. In other developing regions, however, they did not find the gender gap to be significant.

A more recent study by Moore et al. (2017) not only presents evidence that women-led firms in the Caribbean, including Suriname, are less likely to request bank credit but also identifies access to financing as a severe obstacle to their businesses relative to other firms.

Hypothesis VII: Female owners/largest shareholders are more likely to encounter obstacles to financing than their male equivalents.

5.2.6 Ethnicity

Ethnicity could potentially influence access to finance in various ways. For instance, it might foster access to finance by certain ethnic groups through financial or network resources. Furthermore, ethnic networks could facilitate transactions due to their access to the flow of information and informal enforcement mechanisms, both lowering transaction costs (Biggs et al., 2002). However, ethnicity could also be detrimental to access to finance – especially when certain ethnic groups are being discriminated against. This aspect is mostly studied from the angle of ethnic-minority groups (Howell, 2017). If certain ethnic groups are systematically denied credit, they could be discouraged and stop applying due to the fear of prejudicial treatment. Also, economic actors may believe that certain groups are less productive, and ethnic groups with fewer resources could encounter a relatively higher number of obstacles to financing. This might lead to lower credit quality and risks to lenders' profits. Discrimination could occur through negative implicit attitudes or unconscious mental attitudes towards members of certain groups.

As we saw in Chapter 2, Suriname is a multi-ethnic society. The general view is that the distribution of wealth by ethnic group in the country is unequal, and, through the collateral channel, this could potentially lead to discrimination in access to finance and consequently to obstacles to financing. We expect the two major ethnic groups – namely, Indians and, to a lesser extent, Creoles – to experience fewer obstacles to financing than other groups such as Maroons, Javanese, and Chinese. Our aim is not to establish the channels through which ethnicity leads to financing obstacles but merely to establish the empirics thereof.

Hypothesis VIII: Indians and Creoles are less likely than members of other ethnic groups to experience obstacles to financing.

5.2.7 Religion

The literature on access to finance and religion focuses on whether persons or groups are unable or unwilling to access the credit market on religious grounds (Karlan et al., 2017; World Bank, 2008). Religion may prohibit firms from borrowing at (specific) interest rates or conditions (Karlan et al., 2017). Following this line of reasoning, as in the case of ethnicity, we argue that religion could influence access to finance through the role that it plays in networks and discrimination.

We expect the largest religions in Suriname to have a positive impact on the issue of obstacles to financing – that is, firms linked to them experience fewer obstacles that those connected to members of other religions. In Suriname, Christianity and Hinduism are the largest religions. As with previously mentioned factors, our aim in this study is not to find out through which channels religion exerts an influence on obstacle to financing but to establish the empirics thereof. Additionally, ethnicity and religion may overlap: it is well known in Suriname that ethnic groups adhere to a specific religion. In the data analysis, we will pay attention to this issue and deal with it accordingly in the model.

Hypothesis IX: Christians and Hindus are less likely than members of other religions to experience obstacles to financing.

5.2.8 Education

The impact of education on access to and, consequently, on obstacles to financing is mixed but tilted towards a positive relationship, implying that higher education levels lead to better access to finance – or at least to less likelihood of encountering such obstacles (Ogubazghi & Muturi, 2014).

Firms whose owner/manager has a higher level of education than other owners/managers are expected to be better able to manage the firm, prepare financing proposals, and tap advice and networks. In line with our intuition, we expect higher education levels in owner/managers to result in fewer obstacles to finance.

Hypothesis X: Firms with more highly educated owners/largest shareholders are less likely to encounter obstacles to financing.

5.2.9 Audited financial statements

Given the fact that information asymmetry is a leading cause of obstacles to financing, it should follow that firms in possession of better information would suffer less from such obstacles than those with poorer information. Therefore, an acceptable audited financial statement improves a borrower's credibility and reduces risks for lenders (Gamage, 2013). In Chapter 4 of this dissertation, we also found that in selected Caribbean countries, those firms with audited statements experienced fewer obstacles than their less-organized counterparts. In light of the aforementioned findings, we expect firms in Paramaribo with audited financial accounts to experience fewer obstacles.

Hypothesis XI: Firms with audited financial statements are less likely than those without such documentation to report obstacles to financing.

5.2.10 Networks

The inclusion here of networks as a potential determinant of access to finance is motivated by the compelling arguments of network theories (Uzzi, 1999; Lin, 1999). Networks increase access to resources along four channels:

1. Information: a network facilitates the flow of information, either through social networks or through membership of organizations.
2. Influence: social relationships influence decision-making.
3. Social credentials: membership of a network gives access to its resources.
4. Identity/recognition: social relationships are instrumental in strengthening the identity and recognition that lead to trust.

We followed the framework developed by Machirori and Fatoki (2013) to measure the impact of networks on facilitating information regarding the availability, terms, and conditions of

credit products, credit decisions, or credit conditions. Following these authors, we divide the category of "network" into general, managerial, and social:

- General networks refer to membership in professional associations, attendance at trade fairs, the use of accountants, and relationships with government agencies and external consultants.
- Managerial networks include relationships with suppliers, competitors, and customers.
- Social networks include relationships with friends and family/relatives, and membership in social clubs or associations (Machirori & Fatoki, 2013, p. 100).

The specific questions have been adjusted to reflect the Surinamese context. We argue that the extent to which an entrepreneur participates in networks determines the impact on their access to finance. We expect fewer obstacles for firms participating in networks than for those that do not.

Empirical findings on the impact of networks are mixed. While Gamage (2013) and Machirori and Fatoki (2013) find a positive relationship between networks and access to bank finance, Chua, Chrisman, Kellermanns, and Wu (2011) argue that most SMEs are unable to make use of networking (social capital) in order to gain access to debt finance due to their small size and attendant lack of resources.

Given the emerging empirical literature on the role of networks in access to finance, especially in small states, and the fact that in Paramaribo personalized transactions play an important role in business, we include networks as a potential determinant of obstacles to financing.

Hypothesis XII: Firms engaged more closely in networks are less likely than those more loosely engaged to report obstacles to financing.

5.3 The firm-level survey

5.3.1 Survey structure

Given the objective of the survey – namely, to collect information on firms' perceptions regarding obstacles to finance across firm characteristics – it is structured as follows:

- General information: number of employees at the end of 2015 and 2016, gender, ethnicity, religion, and the education level of owners/directors.
- The firm's characteristics: sector, size, type, and legal status.
- Source of financing of working capital and of fixed assets.
- The firm's involvement with banks: bank account, application for bank loan in the past three years, loan.
- General obstacles to financing: derived from the question "Is access to finance … No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this firm?" This is the dependent variable in the regressions.
- Specific obstacles to financing: availability of lending products, interest rates, collateral requirements, transaction costs, land title, and business plan.
- The role of networks in accessing financing: general, managerial, and social networks.
- Measures to improve access to finance from the firm's viewpoint.

The English version of the questionnaire is included as Annex 5.1.

5.3.2 Survey type

Given the large number of firms in the sample, and to aid computer-based data analysis, closed-ended questions were preferred over open-ended or semi-open ones. Moreover, a closed-ended-questions survey takes less time that other types for the interviewer to complete and, as such, is also less costly. Finally, response rates are, in general, higher for surveys with closed-ended questions.

Despite the higher costs, a face-to-face interview was chosen over a mobile-based or an online survey. Poor response rate is a well-known phenomenon in Suriname, even in face-to-face interviews. Furthermore, responses on screening questions – such as gender, ethnicity, and sector – are assumed to be more accurate in such scenarios than in an online or mobile survey, as interviewees find it more difficult to provide false information. More importantly, a face-to-face interview reduces the risk of misunderstanding over certain questions by some firms due to their insufficient level of education or knowledge. Finally, the interviewer has the greatest degree of control over this format, and can keep proceedings focused and on track towards their completion.

5.3.3 Sampling method

Stratified random sampling has been used to select the sample. In this method, the firm-population elements (the total number of firms from which the sample has been drawn) are grouped into non-overlapping strata, followed by simple random sampling from each stratum (Kreuter & Valliant, 2007).

The main reason for this approach is to allow comparisons to be made across strata – for example, sector and firm size. Stratification has the additional advantage of reducing sampling variation (Kreuter & Valliant, 2007). Often, strata reflect groups that are more homogeneous than the population as a whole. Therefore, a sample drawn from a stratification population and an efficient allocation to strata will lead to smaller standard errors in the estimation of population statistics than one taken without stratification. In addition, a lower cost per observation could be achieved, while the concentration of some sectors or firm size in the sampling could be avoided (World Bank, 2011).

The sampling was done by the General Bureau of Statistics (GBS) based on our sample request and the actual number of firms per stratum. The primary sampling unit of the survey is an "establishment," which refers to a physical location where a business is carried out and where physical operations take place or services are provided.

The GBS maintains and updates the firm-level database, and our sample was drawn from there. The database is restricted to firms with a fixed location at which economic activities are being undertaken. Firms in the agriculture sector are not included in the database.

5.3.4 Stratification

The stratification of the firm population is based on **Sector** and **Firm Size**. The firm population of Paramaribo has been clustered into four sectors and three firm sizes, rendering 12 strata.

5.3.4.1 Sectors

The city's firm population consists of private firms in the secondary and tertiary sectors. State-owned enterprises, as well as subsectors designated by the letter "A" (Agriculture, forestry, and fishing) and "B" (Mining and quarrying), are excluded from this study. The latter decision was made because of these subsectors' marginal presence in Paramaribo, the former because of our focus on private-owned enterprises only. In addition, firms providing financial services are excluded due to the focus of the study on determining obstacles faced by firms in obtaining financing. Subsector T&U (the activities of households as employers, undifferentiated goods- and services-producing activities of households for their own use, and the activities of extraterritorial organizations and bodies) is also excluded because the focus here is on the "real" production of goods and services for sale.

The following four subsectors are included:

1. Manufacturing: The International Standard Industrial Classification (ISIC) sectors C (Manufacturing); D (Electricity, gas, steam, and air-conditioning supply); and E (Water supply; sewerage, waste management, and remediation activities).
2. Construction (F).
3. Trade (Wholesale and retail; part of ISIC category G).
4. Services (the rest of G [repair of motor vehicles and motorcycles]; H [Transportation and storage]; I [Accommodation and food-service activities]; J [Information and communication]; L [Real-estate activities]; M [Professional, scientific, and technical activities]; N [Administrative and support-service activities]; P [Education]; Q [Human

health and social-work activities]; R [Arts, entertainment, and recreation]; S [Other service activities]).

In the subsector Services, the following ISIC sectors were excluded:

- K (Financial and insurance activities).
- O (Public administration and defense; compulsory social security).
- T&U (T = Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use; U = Activities of extraterritorial organizations and bodies).

5.3.4.2 Size

Worldwide, various criteria are used to classify firms by size – such as total full-time employment equivalents, total employees, annual turnover, and capital investment (Kushnir, 2010; Kushnir, Mirmulstein, & Ramalho, 2010). Many countries use more than one criterion to classify firms by size. The total number of employees is the most common criterion; however, there is no uniformity when classifying firms using their number of workers. Even within a country, various institutions use different class widths for micro, small, and medium-sized firms – and across industries, this is also standard practice. In small states, micro firms are mostly defined as those with 1 to 5 workers, small firms from 6 to 20 or 25 workers, and medium-size firms from 21 or 26 workers to 50 or 75 or even 100 workers (Kushnir, 2010). As Suriname is a small economy, and given the lack of data regarding turnover and capital investment – and also suggestions by the Suriname Trade and Industry Association – we used the total number of employed persons to classify firms by size. This measure consists of full-time and part-time workers, and working owners or family members.

In our study, the following three groups, based on the number of employed persons, have been selected:

- Micro firms: 1–5.
- Small firms: 6–25.
- Medium-sized firms: 26–75.

Large firms (more than 75 employed persons) have been excluded, mainly on the basis of empirical evidence that they experience far fewer obstacles to financing (Beck et al., 2006).

5.3.5 Sampling frame

The firm population in Paramaribo, as defined in our study, comprises 5,162 firms (as of December 2015) (Table 5.1). The subsectors Trade and Services represent 90 percent of the firm population. Micro firms are dominant in all subsectors (76 percent), followed by small firms (20 percent). Given these characteristics of the firm population, including micro firms in enterprise surveys is of vital importance.

Paramaribo is the capital city of Suriname and the center of the country's political and public-service administration. It is also the economic center of the country. Paramaribo hosts a large part of the national population (44 percent) as well as of business establishments (48 percent) (GBS, 2013, 2014, 2016).

Table 5.1: Sample Frame

Sample Frame: Number of firms in Paramaribo, by subsector and by firms' size (Excluding state enterprises and parastatals; ISIC sectors A and B, K, O, and T& U; and firms with more than 75 workers)				
Subsector/ Firm Size	1-Micro Firm: (1–5 workers)	2-Small Firm: (6–25 workers)	3-Medium Size: (26–75 workers)	Total
1- Manufacturing	224	105	25	**354**
2-Construction	100	66	18	**184**
3-Trade	1986	346	66	**2398**
4-Services	1633	529	64	**2226**
Total	**3943**	**1046**	**173**	**5162**

Source: General Bureau of Statistics.

The GBS provided the sampling data as requested (Table 5.2). In the category medium-sized firms, the sample data consists of the total population of the subsectors Industry, Construction, and Trade. Oversampling of those strata within the category medium-sized firms was necessary to obtain sufficient response for a comparison between strata. We use weights in the data analysis to rebalance the number of cases in order to weight up under-sampled and weight down over-sampled strata so that the results are unbiased.

Table 5.2: Sampling Data

Firms by Sector and Size in Paramaribo				
Subsector/ Firm size	1-Micro Firm	2-Small Firm	3-Medium-sized firm	Total
1-Manufacturing	53	53	25	**131**
2-Construction	53	53	18	**124**
3-Trade	79	79	66	**224**
4-Services	53	53	53	**159**
Total	**238**	**238**	**162**	**638**

Source: General Bureau of Statistics.

The samples in the different strata were derived using a random-sampling method, as explained earlier. The sample size of 638, or roughly 12 percent of the total firm population, was kept larger than necessary in order to achieve the desired margin of error of 5 percent and a confidence level of 95 percent. In other words, 358 completed surveys would be needed to achieve this objective, given the population size of 5,162 firms. This is a common strategy to account for a specific nonresponse rate.

The sample data consisted of the following information:

- Firm name.
- Address.
- Number of workers.
- Zone.
- Subsector.

Due to its data-disclosure policy, the GBS could not provide us with the telephone numbers or email addresses of the firms.

5.3.6 Survey process

The firm-level survey is adapted from the 2010 World Bank Enterprise Survey, and the 2014 IDB and Compete Caribbean PROTEqIN survey, supplemented with data on micro firms; a greater number of sectors; a network block; and certain specific factors such as ethnicity, religion, and education level of the firm's owner/director.

The survey was developed in English and translated into Dutch for its implementation, since Dutch is Suriname's official language. For Chinese firms, the survey was also translated into Mandarin in order to overcome the language barrier.

The draft survey was discussed in terms of its content, first with a support team consisting of Professor Caram (former Governor of the Central Bank of Aruba) and Mr. Gani Gerguri (former Governor of the Central Bank of Kosovo) and subsequently with the author's promoters. After incorporating their comments and suggestions, the survey was discussed in terms of its accessibility with two of its logistics coordinators, whom the author hired. One has B.Sc. in Economics while the other was, at that time, in the final year of B.Sc. study in Accounting at the Anton de Kom Universiteit van Suriname. Both have experience with surveys. The logistics coordinators conducted a pre-test with six firms, of which two were micro, two small, and two large. The results of the pre-test were incorporated into the survey.

Following the pre-test, the author discussed the survey with a team of 20 potential interviewers from the Anton de Kom Universiteit. On that occasion, additional feedback from an interviewer's perspective was received, which was also incorporated in the survey. Those potential interviewers have been selected based on their experience with interviewing. Subsequently, the survey was reproduced using a single-page format to avoid the risk that interviewers would be missing some pages during the interview and to ease data inputting.

5.3.7 Survey administration

Given the limited availability of information on the firms in the sample data, the author had two options when conducting face-to-face interviews. First, either visit all firms and undertake the interview if possible or make an appointment. Second, search for the

telephone numbers of the firms and make an appointment before visiting them. To minimize costs, the author chose the second option. We sourced telephone numbers using an online directory from Suriname's national telecom company, Telesur, and social media.

From the 638-strong sample, we were able to retrieve telephone numbers for 583 firms. The remainder, together with the Chinese companies – even those with telephone numbers – were visited – for the latter group, to overcome the language barrier.

The two logistics coordinators contacted the firms to make appointments for interviews. Based on the response, we grouped the firms into the following two categories:

1. Successful cases: firms willing to participate. The logistics coordinators made the appointments. The Chinese firms were mostly visited in person, as communication through the telephone was problematic due to language barriers.
2. Unsuccessful cases: firms refusing to participate. One group of firms consistently refused to participate from the first contact. They were called again by another person, whom the author contracted in turn, to see if their decision had changed. However, only a few firms in this second category changed their original position and collaborated. Another group consisted of firms who could not decide if they would participate. They received a letter by email signed by the author to try and persuade them and to ensure that individual data would not be shared with anyone. This group was called back several times (in many cases, more than ten times) but very few members of the group agreed to participate.

The logistics coordinators had the following tasks:

- Making an appointment and managing interviewees, and conducting supervisory callbacks with the interviewees after receiving completed questionnaires, to avoid malpractice by the interviewers.
- Preparing daily progress reports. An integrity-and-confidentiality clause was included in the coordinators' contracts – and those signed by the interviewers. Furthermore, there was a clause that in case of malpractice, the Anton de Kom Universiteit and other relevant institutions would be informed. A survey was deemed completed only after the supervisory callback with the interviewee by the logistics coordinators.

Data entry was carried out by the two logistics coordinators and one external person – whose contract also incorporated an integrity and confidentiality clause. After data entry of ten surveys, a random check was done on the quality of the data entry on one firm, by the one of the other two persons, as stipulated in their contracts. Furthermore, a cross-check of the data was carried out following the completion of the data-entry process. We randomly selected 85 firms out of 284 (30 percent) to see if the data entry had been done accurately. This screening process showed that there were only eight errors, or a negligible percentage of the total responses, and that these were not related to the main variables of the study. The errors were corrected. The hard copies of the surveys have been stored by the author.

The logistics coordinators, interviewers, and the external data-entry person each received a certificate as proof of their participation in the survey. This was pre-announced, and intended to ensure the dedication and integrity required throughout the whole process.

5.3.8 Completed surveys and weights

The survey of 638 firms yielded the following results (Table 5.3):

- 284 completed surveys (45%).
- 272 refused cases (42%).
- 82 non-existing firms (those from the sample data that no longer existed by the time of the survey) (13%).

If we exclude the non-existing firms from the sample data, the response rate increases from 45 to 51 percent.

Table 5.3: Completed surveys relative to sampling data

Subsector/Firm size	1-Micro Firm	2-Small Firm	3-Medium Size	Total
1-Manufacturing	18 (53)	22 (53)	12 (25)	**52 (131)**
2-Construction	31 (53)	29 (53)	13 (18)	**73 (124)**
3-Trade	25 (79)	36 (79)	30 (66)	**91 (224)**
4-Services (incl. motor-vehicle and motorcycle repair)	20 (53)	27 (53)	21 (53)	**68 (159)**
Total	**94 (238)**	**114 (238)**	**76 (162)**	**284 (638)**

Source: General Bureau of Statistics and author.
Note: sample data in brackets.

From the 284 completed surveys, the distribution is as follows: Manufacturing 18 percent, Construction 26 percent, Trade 32 percent, and Services 24 percent. In terms of size, the distributions are as follows: 33 percent micro, 40 percent small, and 27 percent medium-sized firms.

Table 5.4: Response rate per stratum
(In percent of stratum)

Subsector/Firm size	1- Micro Firm	2-Small Firm	3- Medium Size	Total
1-Manufacturing	34.0	41.5	48.0	**40.0**
2-Construction	58.5	54.7	72.2	**58.9**
3- Trade	58.5	45.6	45.5	**40.6**
4-Services (incl. motor-vehicle and motorcycle repair)	37.7	50.9	39.6	**42.8**
Total	**39.5**	**47.9**	**46.9**	**44.5**

Source: Author's calculations.

The response rate is between 34 percent and 59 percent per stratum, with the exception of 72 percent in the stratum Construction/Medium Size (Table 5.4). Therefore, we could conclude that there is no systematic bias in the response rate per stratum that could bias the regression results.

5.3.9 Survey weights

In Table 5.5, we present the firm population, the sample and the weights per stratum.

Table 5.5: Population, eligible population, base weights, and non-response adjusted weights

Strata/Population&Weights	Original Population	Non existing firms	Eligible Population 1	Eligible Population 2	Sample	Base Weight	Response	Weight1	Weight2
Manufacturing-Micro	224	16	208	156	53	4.23	18	11.56	8.69
Manufacturing-Small	105	6	99	93	53	1.98	22	4.50	4.23
Manufacturing_Medium	25	0	25	25	25	1.00	12	2.08	2.08
Construction_Micro	100	9	91	83	53	1.89	31	2.94	2.68
Construction_Small	66	6	60	59	53	1.25	29	2.07	2.02
Construction_Medium	18	0	18	18	18	1.00	13	1.38	1.38
Trade_Micro	1986	15	1971	1609	79	25.14	25	78.84	64.36
Trade_Small	346	4	342	328	79	4.38	36	9.50	9.12
Trade_Medium	66	0	66	66	66	1.00	30	2.20	2.20
Services_Micro	1633	22	1611	955	53	30.81	20	80.55	47.76
Services_Small	529	2	527	509	53	9.98	27	19.52	18.85
Services_Medium	64	2	62	62	53	1.21	21	2.95	2.93
Total	**5162**	**82**	**5080**	**3963**	**638**		**284**		

Source: GBS and Author

Notes:

- Original population= population per stratum according to the sample frame
- Non-existing firms= firms from the sample data which were non-existing by the time of the survey
- Eligible population 1: original population minus non-existing firms
- Eligible population 2: original population minus non-existing firms using base weights (original population - non-existing firms x base weight)
- Sample= sample data
- Base weight= original population/sample
- Response: completed surveys
- Weight 1= eligible population1/response (non-response adjusted weight)
- Weight2= eligible population2/response (non-response adjusted weight)

In the case of non-existing and non-responding firms, the base weight has to be adjusted (Yansaneh, 2003). We calculated Weight1 by dividing the Eligible Population1 by the number of respondents. Eligible Population1 is corrected for non-existing and non-responding firms, without using stratum weights. In calculating Weight2, we divide Eligible Population2 by the number of respondents. Eligible Population2 is corrected for non-existing and non-responding firms using the strata weights.

In the data analysis and model estimations, we use Weight1, while we use Weight2 for sensitivity analysis in the model estimations.

5.4 Survey analysis

5.4.1 Sources of financing

We measured the sources of financing for working capital and fixed assets on a Likert scale, from 1 ("Not important at all") to 5 ("Very important"). In Tables 5.6 and 5.7, we summarize the results based on weighted response percentages per source for working capital and fixed assets, respectively.

The top five aggregate "Important" and "Very important" sources of financing for working capital in descending order are private capital (64 percent), commercial banks (44 percent), internal resources (40 percent), suppliers' credit and advances from customers (35 percent), and credit cards (23 percent). Family/friends in Suriname, as well as living abroad, have an equal importance of 18 percent. The commercial banks are the most important external source of financing obtained from financial institutions. The other sources of financing are largely unimportant. The aggregate responses in the categories "Not important at all" and "Not important" are high: state-owned banks (96 percent), non-bank financial institutions (89 percent), informal sources (96 percent), "angel" investors (91 percent), venture capitalists (89 percent), government-provided or subsidized programs (95 percent) and factoring (94 percent).

The sources of financing for fixed assets show a similar picture to those for working capital. The top five aggregate "Important" and "Very important" sources of financing for fixed assets in descending order are private capital (63 percent), commercial banks (44 percent), internal resources (39 percent), suppliers' credit and advances from customers (32 percent), and credit cards (23 percent). Family/friends in Suriname scores 17 percent and those living abroad 16 percent. Also, for the financing of fixed assets, the commercial banks are the most important external source of all the financial institutions. The aggregate responses in the categories "Not important at all" and "Not important" indicate those sources that have perceived minor importance: state-owned banks (95 percent), non-bank financial institutions (89 percent), informal sources (91 percent), angel investors (93 percent), venture capitalists (92 percent), government-provided or subsidized programs (92 percent), new equity (97 percent), leasing (92 percent) and factoring (96 percent).

Table 5.6: Sources of financing for working capital (Weighted row percentages; rounded)

	Not important at all	Not important	Of average	Important	Very important	Total
Internal funds/Retained earnings	50	1	9	7	33	**100**
External source of financing:						
- Private commercial banks	43	7	6	11	33	**100**
- State-owned banks	89	7	1	0	3	**100**
- Non-bank financial institutions	85	4	8	1	2	**100**
- Purchases on credit from suppliers and advances from customers	51	5	9	2	33	**100**
- Family/friends in Suriname	69	6	7	9	9	**100**
- Family/friends living abroad	70	5	7	9	9	**100**
- Informal sources	93	3	1	2	1	**100**
- Angel Investors	89	2	2	1	6	**100**
- Venture Capitalists	88	1	3	1	7	**100**
- Private Equity	25	3	8	4	60	**100**
- Credit Cards	70	4	3	4	19	**100**
- Government provided or subsidized entity or program	93	2	1	0	4	**100**
- Factoring	91	4	1	2	2	**100**
- Other	88	0	1	1	10	**100**

Source: Author's calculations.

Table 5.7: Sources of financing for fixed assets
(Weighted row percentages; rounded)

	Not important at all	Not important	Of average	Important	Very important	Total
Internal funds/Retained earnings	53	1	7	7	32	**100**
External source of financing:						
- Private commercial banks	46	5	4	12	33	**100**
-State-owned banks	89	7	3	0	1	**100**
-Non-bank financial institutions	87	2	6	1	4	**100**
-Purchases on credit from suppliers and advances from customers	60	1	9	2	30	**100**
-Family/friends in Suriname	67	5	11	6	11	**100**
-Family/friends living abroad	71	3	10	9	7	**100**
- Informal sources	91	1	2	2	4	**100**
-Angel Investors	89	4	2	0	5	**100**
-Venture Capitalists	91	1	2	1	5	**100**
-Private Equity	28	1	5	7	59	**100**
-Credit Cards	71	2	4	6	17	**100**
-Government provided or subsidized entity or program	91	1	2	2	4	**100**
-Issued new equity	96	2	2	0	0	**100**
-Issued new debt (including commercial paper and debentures)	94	1	3	0	2	**100**
-Lease	90	2	5	0	3	**100**
-Factoring	95	1	2	0	2	**100**
-Other	93	3		0	4	**100**

Source: Author's calculations.

5.4.2 Obstacles to financing

The general concept of obstacles to financing is derived from the question "Is access to finance, which includes availability and cost, interest rates, fees, and collateral requirements, No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this firm?"

Table 5.8: General and specific obstacles to financing
(Weighted row percentages; rounded)

		No obstacle	Minor obstacle	Moderate obstacle	Major obstacle	Very Severe obstacle	Total
General Obstacle	**Is access to finance an obstacle?**	47	10	20	11	12	**100**
Specific Obstacles	Availability and type of credit	68	6	12	6	8	**100**
	Interest rate	34	1	10	16	39	**100**
	Requirements for collateral (value and type)	45	5	14	8	28	**100**
	Transaction costs	69	7	12	4	8	**100**
	Lack of appropriate land title	78	2	8	6	6	**100**
	Difficulty to prepare business plan	81	6	5	4	4	**100**

Source: Author's calculations.

We conclude that 53 percent of the firms experience access to finance as a minor to very severe obstacle for their current operations, while 47 percent do not experience access to finance as an obstacle (Table 5.8).

The specific obstacles, in descending order of importance and ranging from "Minor" to "Very Severe Obstacle," are: Interest rate (66 percent), Collateral requirements (54 percent), Availability and type of credit (32 percent), Transaction costs (31 percent), Lack of appropriate land title (21 percent), and Difficulty to prepare business plan (19 percent).

We decide to collapse the five categories of the dependent variable into a binary variable for the following two reasons. First, the cross tabs of the dependent variable with five categories and independent variables with more than two categories render low cell counts, leading to model instability. Furthermore, the focus of this study is to find out which factors determine moderate to severe constraints to private-sector firms in Suriname. Therefore, the dependent variable has been collapsed into a dichotomous variable to avoid flaws in the model and to reflect the interest of the study:

- No obstacle = 0 (categories 1 and 2).
- Obstacle = 1 (categories 3 to 5).

Table 5.9 summarizes the unweighted and weighted dichotomized responses: 52 percent of the firms do not experience obstacles to financing, while 48 percent experience them when looking at unweighted responses. Those percentages change to 56 percent and 44 percent, respectively, when including the weights.

Table 5.9: General obstacle to financing
(Dichotomized; rounded)

Financing Obstacle	Unweighted		Weighted
	Freq.	Percent	Percent
No Financing Obstacle	147	52	56
Financing Obstacle	137	48	44
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.3 Networks

We measured the participation of firms in networks – divided into General, Managerial, and Social Networks – on a binary level (Yes = 1; No = 0). In Table 5.10, we summarize the weighted percentages.

Table 5.10: Participation in networks
(Weighted row percentages; rounded)

	No	Yes	Total
General Networks	**74**	**26**	**100**
1. Is the firm a member of the profession/trade association(s)?	80	20	**100**
2. Does the firm attend trade fairs and business seminars?	82	18	**100**
3. Does the firm have relationships with government agencies?	75	25	**100**
4. Does the firm have relationships with accountants?	58	42	**100**
5. Does the firm have relationships with external accountants?	73	27	**100**
Managerial Networks	**39**	**61**	**100**
1. Does the firm have relationships with competitors (meetings of managers of similar firms)?	52	48	**100**
2. Does the firm have a relationship with suppliers?	22	78	**100**
3. Does the firm have a relationship with firms other than competitors and suppliers?	48	52	**100**

4. Does the firm have a relationship with costumers?	35	65	**100**
Social Networks	**74**	**26**	**100**
1. Is the director/owner a member of social associations/clubs?	81	19	**100**
2. Does the director/owner have relationships with friends that led to information about credit products/loan-application processes or affected credit conditions or credit decisions?	71	29	**100**
3. Does the director/owner have a relationship with families and relatives that led to information about credit products/loan-application processes or affected credit conditions or credit decisions?	71	29	**100**

Source: Author's calculations.

Participation in Managerial Networks is the highest (61 percent), followed in equal proportion by General Networks and Social Networks (26 percent each).

We also measured whether the various networks have facilitated

1. information on the availability of credit products, the drafting of credit proposals, credit- application processes, and credit conditions; or
2. credit decisions and credit conditions (such as collateral and interest rate) by the credit provider.

Table 5.11 summarizes the responses. On average, 30 percent of the firms perceive networks to facilitate credit information and 19 percent to influence credit decisions/conditions. Social networks have the most significant impact on credit information (41 percent) and managerial networks on credit decisions/conditions (21 percent).

Table 5.11: Impact of network on credit information and credit decisions/conditions

(Weighted row percentages; rounded)

	No	Yes	Total
Impact on credit information	**70**	**30**	**100**
- General networks' impact on information	74	26	**100**
- Managerial networks' impact on information	77	23	**100**
- Social networks' impact on information	59	41	**100**
Impact on credit decision	**81**	**19**	**100**
- General networks' impact on credit decision or conditions	84	16	**100**
- Managerial networks' impact on credit decision or conditions	79	21	**100**
- Social networks' impact on credit decision or conditions	81	19	**100**

Source: Author's calculations.

5.4.4 How do firms perceive measures by the government to enhance access to finance?

The impact of policy measures on enhancing access to finance for firms, in descending order and ranging from "Little" to Major" impact, is as follows: Financial education (93 percent), Introduction of business-support centers (81 percent), Credit-guarantee funds (81 percent), Introduction of pledge registry for movable and immovable assets (78 percent), Introduction of credit-registry bureau (77 percent), and Reform of collateral framework to allow movable collateral (73 percent) (Table 5.12).

Table 5.12: Impact measures on access to finance for firms

(Weighted row percentages; rounded)

	None	Little	Some	Substantial	Major	Total
Introduction of business-support centers	19	12	18	24	27	**100**
Introduction of credit-registry bureau	23	15	19	16	27	**100**
Introduction of pledge registry for movable and immovable assets	22	10	25	23	20	**100**
Credit-guarantee funds	19	7	13	26	35	**100**
Reform of the collateral framework to allow for movable collateral	27	12	15	21	25	**100**
Financial education	7	7	20	30	36	**100**

Source: Author's calculations.

5.4.5 Sector

In Table 13, we present the unweighted and weighted response distribution of the variable "Sector." There is a significant difference between the weighted and the unweighted shares of the various subsectors in the variable Sector. The implication is that using weights in the model estimations is imperative to obtain unbiased results.

Table 5.13: Descriptive statistics Sector

Sector	**Unweighted**		**Weighted**
	Freq.	Percent (rounded)	Percent (rounded)
1-Manufacturing	52	18	7
2-Construction	73	26	3
3-Trade	91	32	47
4-Services	68	24	43
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.6 Size

Small firms have the largest share (40 percent) followed by micro firms (33 percent) and medium-sized firms (27 percent) in the unweighted summary of the variable "Size." When using weights, micro firms have the largest share (76 percent), followed by small firms (20 percent) and medium-sized firms (3 percent) (Table 5.14).

Table 5.14: Descriptive statistics Size

Size	**Unweighted**		**Weighted**
	Freq.	Percent (rounded)	Percent (rounded)
Micro	94	33	76
Small	114	40	20
Medium	76	27	3
Total	**284**	**100**	**100**

Source: Author's calculations.

Like the variable Sector, this variable also has large swings in the unweighted versus weighted shares of responses. Once again, we conclude that using weights in the model estimations is imperative.

5.4.7 Legal status

The unweighted shares of firms are almost equal for non-shareholding and shareholding firms, while the weighted shares change drastically – that is, three-quarters of the firms are non-shareholding while one quarter is shareholding (Table 5.15).

Table 5.15: Descriptive statistics Legal Status

Legal Status	**Unweighted**		**Weighted**
	Freq.	Percent (rounded)	Percent (rounded)
Non-Shareholding	149	52	76
Shareholding	135	48	24
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.8 Gender

Table 5.16 displays the fact that males dominate the ownership or largest shareholding of firms, at 65 percent (unweighted) and 60 percent (weighted). The weighted shares of the categories Equally Men–Women and Women are closer – around one fifth. This distribution of firms by gender does not reflect the almost equal gender shares of men and women in the population of Paramaribo (Annex 5.2).

Table 5.16: Descriptive statistics Gender

Gender	Unweighted		Weighted
	Freq.	Percent (rounded)	Percent (rounded)
Men	185	65	60
Equally Men–Women	63	22	18
Women	36	13	22
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.9 Ethnicity

The largest weighted ethnic groups among the firms' owners/largest shareholders are Chinese (32 percent) followed by Indian (25 percent), Mixed (19 percent), Creole (15 percent), Maroon+Other (7 percent), and Javanese (2 percent) (Table 5.17). The ownership of firms by ethnicity in Paramaribo is very different from the percentage share of its population (Annex 5.3). Its Chinese population, for instance, comprises just 2.1 percent of the total population of Paramaribo while this ethnic group owns/manages 32 percent of the firms in the capital.

Table 5.17: Descriptive statistics Ethnicity

Ethnicity	Unweighted		Weighted
	Freq.	Percent (rounded)	Percent (rounded)
Chinese	51	18	32
Creole	39	14	15
Indian	91	32	25
Javanese	14	5	2
Mixed	65	23	19
Maroon+Other	24	8	7
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.10 Religion

The weighted shares of ownership/largest shareholders of firms by religion, in descending order, are as follows: Christianity (44 percent), None (25 percent), Hinduism (18 percent), Other (7 percent), and Islam (6 percent) (Table 5.18). The composition of the population of Paramaribo by religion is as follows: Christianity (59 percent), Hinduism (18 percent), None (11 percent), Islam (10 percent), and Other (3 percent) (Annex 5.4).

A closer look at religion by ethnicity shows that 55 percent of the city's Chinese population does not have a religion, which corresponds to 70 percent of the category None by ethnic groups (Annex 5a and 5b).

Table 5.18: Descriptive statistics Religion

Religion	Unweighted		Weighted
	Freq.	Percent (rounded)	Percent (rounded)
Christianity	126	44	44
Hinduism	59	21	18
Islam	33	12	6
Other	20	7	7
None	46	16	25
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.11 Education

The unweighted percentage shares of the education level of firm owners/largest shareholders are 19 percent for Low while almost equal for Middle and High: 41 and 40 percent, respectively. When applying weights, the data show 30 percent Low education, 44 percent Middle, and 26 percent High education (Table 19).

Table 5.19: Descriptive statistics Education

Education	Unweighted		Weighted
	Freq.	Percent (rounded)	Percent (rounded)
Low	53	19	30
Middle	116	41	44
High	115	40	26
Total	**284**	**100**	**100**

Source: Author's calculations.

5.4.12 Financial statement

The unweighted shares of firms with audited financial statements by an external auditor is more or less the same (Table 20). However, the weighted shares reveal that more than two-thirds of the firms do not have their financial statements checked by an external auditor, while approximately one-third of them do.

Table 5.20: Descriptive statistics Financial Statement

Financial Statement	Unweighted		Weighted
	Freq.	Percent (rounded)	Percent (rounded)
No	135	48	69
Yes	149	52	31
Total	**284**	**100**	**100**

Source: Author's calculations.

5.5 The probit model

Econometric model

Given that obstacles to financing constitute a dichotomous dependent variable, a logit or probit model would be the obvious choice. The results from the probit and logistic models should not differ significantly (Long & Freese, 2014). We arbitrarily choose the probit model as the primary model and carry out a robustness check using a logistic ("logit") model. In probit and logit models, the probability of firms experiencing obstacles to financing as a non-linear function of a set of regressor X can be written as follows:

$$Probit/Logit\ (Obstacle) = \beta_0 + \beta_1 \mathrm{Sector} + \beta_2 Size + \beta_3 Age + \beta_4 \mathrm{LegStat} + \beta_5 \mathrm{GenderOwner} + \beta_6 \mathrm{EthOwn} + \beta_7 \mathrm{RelOwn} + \beta_8 \mathrm{EduOwn} + \beta_9 \mathrm{FinStat} + \beta_{10} \mathrm{Network} + \varepsilon_i$$

Equation 1

We assume that the disturbance parameter ε_i has a standard normal distribution in the probit model, and a standard logistic distribution in the logit model. We use standard maximum likelihood estimation.

$$P(Y = 1) = \emptyset\ (X'\beta) = \int_{-\infty}^{(X'\beta)} \theta\ (z)\, dz$$

Equation 2

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

Equation 3

Equations (2) and (3) are probit and logit formulas for the conditional probability that a firm experiences obstacles to financing, where:

- P(Y = 1) is the probability of firms experiencing obstacles to financing;
- X is a set of selected independent variables;
- $\emptyset\ (X'\beta)$ is the cumulative distribution function of the standard normal distribution; and
- $\nabla\ (X'\beta)$ is the cumulative distribution function of the standard logistic distribution.

Table 5.21 describes the set of variables included in the model and their respective measurements.

Table 5.21: Model variables and their measurement

Dependent Variable	
Obstacle	Obstacle is derived from the question: "Is access to finance, which includes availability and cost, interest rates, fees and collateral requirements, No Obstacle (1), a Minor Obstacle (2), a Moderate Obstacle (3), a Major Obstacle (4), or a Very Severe Obstacle (5) to the current operations of this firm?" We collapsed the five categories dependent variable into a binary variable for the following two reasons. First, the cross tabs of the dependent variable with five categories and independent variables with more than two categories rendered low cell counts, leading to model instability. This is due to the relatively small database of 284 firms. Furthermore, the focus of this study is to find out which factors determine moderate to severe constraints to private-sector firms in Suriname. Therefore, the dependent variable has been collapsed to avoid flaws in the model and to reflect the interest of the study in a dichotomous variable: No obstacle = 0 (categories 1 and 2) Obstacle = 1 (categories 3 to 5)
Independent Variables	
Sector	Sector is the industrial sector and is measure on a nominal level in four categories: 1 = Manufacturing; 2 = Construction; 3 = Trade; 4 = Services. While the World Bank (2010) measured only manufacturing and services, we included four subsectors aimed at measuring sectors on a more disaggregated level.
Size	Firm size based on Workers 1–5 Workers = 1 (micro); 6–25 Workers = 2 (small); 26–75 Workers = 3 (medium). Size is based on the number of reported workers at the end of 2015, including full-time, part-time, and working owner(s) and family members. This definition has been adopted given the fact that we include micro firms in our sample, and in this category it is normal for owners and family members to work in the firm. Our approach differs from that of the WBES because the World Bank only included the number of reported permanent full-time workers. This classification follows Surinamese reality, classification in other small countries, and discussion with the Suriname Business Association. The WBES uses the following sizes, based on full-time employees: 1 = Small >=5 and <=19; 2 = Medium >=20 and <=99; 3 = Large >=100. Micro firms have been excluded from the World Bank Enterprise Survey, while this category of firms represents a significant share of the firm population in Suriname.

Age	Age is measured on a continuous scale (years) and derived from the following question: "In which year did this firm start operations?" As age appears to be non-linear (parabolic), we accounted for this feature by including Age and its squared term in the model.
Legal Status	Legal Status was originally measured as follows: 1. Shareholding company with shares traded in the stock market (NV); 2. Shareholding company with non-traded shares or shares traded privately (NV); 3. Sole proprietorship; 4. Partnership; 5. Limited partnership; 6. Foundation; 7. Union/association; 8. Other. Due to some low cell counts, we decided to collapse this variable into a binary variable: 1–2 = 1 (Shareholding company) 3–8 = 0 (Non-shareholding company)
Gender Owner/Largest Shareholder	Gender of Owner/Largest Shareholder was originally measured as follows: 1. All men; 2. Predominantly men; 3. Equally men and women; 4. Predominantly women; 5. All women. Due to some low cell counts, we decided to collapse this variable into a variable with three categories: 1–2 = 0 (Men) 3 = 1 (Equally Men–Women) 4–5 = 2 (Women)
Ethnicity Owner/Largest Shareholder	Ethnicity of Owner/Largest Shareholder was originally measured as follows: 1. Chinese; 2. Creole; 3. Indian; 4. Amer-Indian; 5. Javanese; 6. Maroon; 7. Mixed; 8. Other. Due to no cases in category 4 and low cases in categories 6 and 8, we recoded the categories as: 1. Chinese; 2. Creole; 3. Indian; 4. Javanese; 5. Mixed; 6. Maroon+Other.
Religion Owner/Largest Shareholder	Religion of Owner/Largest Shareholder was originally measured as follows: 1. Christianity; 2. Hinduism; 3. Islam; 4. Other, which?; 5. None. Due to low cell count, we merged categories 4 and 5 into Other.

Education Owner/Largest Shareholder	Education of Owner/Largest Shareholder was originally measured as follows: 1. Did not complete primary school; 2. Completed primary school; 3. Started but did not complete secondary school; 4. Completed secondary school; 5. Started but did not complete college/vocational training; 6. Completed college/vocational training; 7. Did not complete university; 8. University Graduate; 9. Post-graduate (Master's, Ph.D.); 10. Other, please specify. Due to low cell count in some categories, we merged this variable into three categories. 1–4 = 1 (Low) 5–7 = 2 (Middle) 8–9 = 3 (High)
Financial Statement	This variable is derived from the question: "Are the financial statements checked and certified by an external auditor?" No = 0 Yes = 1
Network	Network is a summative index of 12 binary questions. Network appeared to be non-linear (parabolic). Therefore, we accounted for this feature by including Network as its squared term in the model.

Note: missing data have been imputed based on correlations between variables.

The dependent variable Obstacle and the independent variables Legal Status and Financial Statement are binary, while Sector, Gender Owner/Largest Shareholder, Ethnicity Owner/Largest Shareholder , and Religion Owner/Largest Shareholder (= Religion Owner) are measured on a nominal level. The variables Age and Network are continuous variables, while Size and Education Owner are ordered categorical variables.

Table 5.22 presents the summary statistics for the variables of the probit model.

Table 5.22: Summary statistics for categorical variables

	Obstacles to Financing		
	No Obstacles to Financing	**Obstacles to Financing**	**Total**
Sector			
Manufacturing	21 (37)	31 (63)	52 (100)
Construction	28 (39)	45 (61)	73 (100)
Trade	54 (48)	37 (52)	91 (100)
Services	44 (70)	24 (24)	68 (24)
	147 (65)	137 (44)	**284 (100)**
Size			
Micro	44 (56)	50 (44)	94 (100)

Small	61 (58)	53 (42)	114 (100)
Medium	42 (57)	34 (43)	76 (100)
	147 (56)	137 (44)	**284 (100)**
Legal Status			
Non-Shareholding Company	71 (53)	78 (47)	149 (100)
Shareholding Company	76 (47)	59 (34)	135 (100)
	147 (56)	137 (44)	**284 (100)**
Gender			
Men	88 (51)	97 (49)	185 (100)
Equally Men–Women	37 (65)	26 (35)	63 (100)
Women	22 (64)	14 (36)	36 (100)
	147 (65)	137 (44)	**284 (100)**
Ethnicity			
Chinese	22 (39)	29 (61)	51 (100)
Creole	24 (72)	15 (28)	39 (100)
Indian	51 (65)	40 (35)	91 (100
Javanese	8 (76)	6 (24)	14 (100)
Mixed	1 (18)	7 (82)	8 (100)
Maroon+Other	41 (60)	40 (40)	81 (100)
	147 (56)	137 (44)	**284 (100)**
Religion			
Christianity	70 (58)	56 (42)	126 (100)
Hinduism	32 (54)	27 (46)	59 (100)
Islam	18 (83)	15 (17)	33 (100)
Other	7 (50)	13 (50)	20 (100)
None	20 (50)	26 (50)	46 (100)
	147 (56)	137 (44)	**284 (100)**
Education			
Low	29 (57)	24 (43)	53 (100)
Middle	54 (51)	62 (49)	116 (100)
High	64 (65)	51 (35)	155 (100)
	147 (56)	137 (44)	**284 (100)**
Financial Statement			
No	66 (55)	69 (45)	135 (100)
Yes	81 (60)	68 (40)	149 (100)
	147 (56)	137 (44)	**284 (100)**

Source: Author's calculations.

Note: Figures in parenthesis are weighted percentages, rounded. The weighted percentages of "No Obstacles to Financing" and "Obstacles to Financing" vis-a-vis unweighted counts could differ widely due to strata weights.

Sector

As presented in Table 5.22, most of the surveyed firms experiencing obstacles to financing operate in the Manufacturing (63 percent), the Construction (61 percent), and Trade (52 percent) sectors. Most firms in the Services sector (70 percent) report experiencing no obstacles to financing.

Size

In terms of size, more or less the same percentage of the Micro, Small, and Medium-sized firms report experiencing obstacles to financing (on average, 43 percent).

Legal Status

Most of the Non-Shareholding Company firms (47 percent) report experiencing obstacles to financing, while most Shareholding Company firms (66 percent) experience no such obstacles.

Gender Owner/Largest Shareholder

Most of the firms with a male owner or largest shareholder experience obstacles to financing (49 percent). On the other hand, most of the surveyed firms with a woman as owner or largest shareholder experience no financial obstacles (64 percent).

Ethnicity Owner/Largest Shareholder

In terms of the ethnicity of the owner/largest shareholder, the results show that Javanese, Creoles, and Indian firms experience no obstacles to financing by a measure of 76, 72, and 65 percent respectively. Firms with Chinese, Mixed, or Maroon+Other owners or largest shareholders report experiencing more obstacles to financing: 61, 82, and 40 percent respectively.

Religion Owner/Largest Shareholder

Results from Table 5.22 also indicate that firms' owners/largest shareholders who indicated having Islam, Christianity, or Hinduism as a religion experience no obstacles to financing by a measure of 83, 58, and 54 percent respectively, while those with Other or None as their religion experience more obstacles to financing: 50 percent in each case.

Education Owner/Largest Shareholder

Results reported in Table 5.22 also show that most of the firms with an owner/largest shareholder with a high education level report experiencing no obstacles to financing (65 percent). On the other hand, most firms with an owner/largest shareholder with a middle education level experience obstacles to financing (49 percent).

Financial Statement

Most firms with financial statements checked by a certified external auditor report experiencing no obstacles to financing (60 percent).

Table 5.23: Summary continuous variables

Variable	Observations	Mean	Std. Dev.	Min	Max
Age	284	24	24	1	250
Age_squared	284	1154	4051	1	62500
Network	284	7	3	1	13
Network_squared	284	58	44	1	169

Source: Author's calculations.

Firm age ranges from 1 to 250 years old, which indicates a wide range between firms in terms of length of time spent in business. The average age is around 24 years, Network ranges from 1 to 13, and the average Network is around 7 (Table 5.23).

The correlation matrix (Annex 5.6) indicates a high correlation between religion and ethnicity (highlighted figures). In that context, we cannot use these variables jointly in the model. In addition to simple correlation analysis, it is a common practice to compute either the variance inflation factor (VIF) or tolerance, which is the inverse of the variance inflation factor, in order to test for multicollinearity. For both models, the VIF does not exceed the widely used thresholds of 5–10 (Annex 5.7). Hence, the explanatory variables are not highly correlated – indicating that there is no severe multicollinearity.

Next, we present the results of the probit model estimation (Table 5.24). As a robustness test, we also executed a logit model. The output of the logit model and its marginal effects are presented in Annexes 5.8 and 5.9. The output of the probit and logit models is almost identical

with respect to significant variables and their respective signs. This implies that the results of the probit model are robust. For a sensitivity analysis, a probit model with Weight2 was executed. The results do not differ significantly (Annex 5.10).

Table 5.24: Models of obstacles to financing faced by firms

Models for Obstacle **Independent Variables**	Probit Model 1	Probit Model 2
Sector		
Manufacturing	1.030***	1.258***
	(0.347)	(0.356)
Construction	0.873***	1.025***
	(0.309)	(0.300)
Trade	0.479	0.808**
	(0.360)	(0.328)
Size		
Small	-0.0392	0.0399
	(0.327)	(0.294)
Medium	0.138	0.383
	(0.399)	(0.369)
Age	0.071*	0.0686**
	(0.0257)	(0.0275)
Age_Squared	-0.0010***	-0.0011***
	(0.0003)	(0.0004)
Legal Status	-0.635*	-0.565*
	(0.369)	(0.339)
Gender		
Equally Men–Women	-0.507	-0.448
	(0.381)	(0.369)
Women	-0.304	-0.408
	(0.393)	(0.397)
Ethnicity		
Creole	-1.249***	
	(0.431)	
Indian	-1.419***	
	(0.416)	

Javanese	-1.869***	
	(0.606)	
Mixed	-0.844*	
	(0.432)	
Maroon+Other	-0.619	
	(0.594)	
Religion		
Hinduism		-0.200
		(0.407)
Islam		-1.232***
		(0.389)
Other		1.141*
		(0.590)
None		0.479
		(0.386)
Education		
Middle	0.483	0.165
	(0.352)	(0.362)
High	0.362	-0.156
	(0.472)	(0.439)
Financial Statement	-0.0875	-0.356
	(0.327)	(0.313)
Network	0.488***	0.529**
	(0.177)	(0.206)
Network_squared	-0.0284**	-0.0323**
	(0.0128)	(0.0142)
Constant	1.920**	-2.650***
	(0.602)	(0.730)
Observations	284	284

Source: Author's calculations.
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

We use the marginal effects of the probit model to interpret the signs and magnitudes of their associations (Table 5.25).

Table 5.25: Marginal effects: at means (MEM)

MEM and after Probit VARIABLES	MEM Model 1	MEM Model 2
Sector		
Manufacturing	0.393***	0.468***
	(0.122)	(0.118)
Construction	0.335***	0.383***
	(0.111)	(0.103)
Trade	0.180	0.298***
	(0.133)	(0.115)
Size		
Small	-0.0151	0.0155
	(0.126)	(0.114)
Medium	0.0541	0.152
	(0.157)	(0.145)
Age	0.0275***	0.0266**
	(0.00971)	(0.0104)
Age_squared	-0.000418***	-0.000437***
	(0.000147)	(0.000160)
Legal Status	-0.230*	-0.207*
	(0.122)	(0.116)
Gender		
Equally Men–Women	-0.189	-0.170
	(0.133)	(0.133)
Women	-0.117	-0.156
	(0.148)	(0.146)
Ethnicity		
Creole	-0.466***	
	(0.140)	
Indian	-0.515***	
	(0.128)	
Javanese	-0.613***	
	(0.131)	

Mixed	-0.325**	
	(0.158)	
Maroon+Other	-0.237	
	(0.230)	
Religion		
Hinduism		-0.0729
		(0.145)
Islam		-0.314***
		(0.0862)
Other		0.420**
		(0.177)
None		0.189
		(0.150)
Education		
Middle	0.182	0.0645
	(0.130)	(0.141)
High	0.134	-0.0584
	(0.176)	(0.164)
Financial Statement	-0.0337	-0.135
	(0.125)	(0.115)
Network	0.189***	0.205***
	(0.0686)	(0.0796)
Network_squared	-0.0110**	-0.0125**
	(0.00499)	(0.00551)
Observations	284	284

Source: Author's calculations.
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

5.6 Discussion of results

The discussion of the results is based on Model 1 and its marginal effects – except for religion, for which we use Model 2, in which religion is included.

Within the variable "Sector," Manufacturing and Construction are significant, with a positive sign. The change in probability (that Y = 1) when a sector goes from Services (the reference group) to Manufacturing and Construction increases 39.3 and 33.5 percentage points respectively if all other independent variables are held constant at their mean values – that is, marginal effects at means. This means that firms operating in the manufacturing sector are 39 percentage points more likely to experience obstacles to financing than firms in the services sector. Firms in the construction sector are 33.5 percentage points more likely to experience obstacles to financing than firms in the services sector. Our finding is in line with the study by Hall et al. (2000), who identified the sector as an important determinant of obstacles to financing. In the case of the trade sector, the coefficient of the first model is insignificant, while Trade is a significant determinant of obstacles to finance in the second model. Results show that firms in the trade sector are 29.8 percentage points more likely to experience obstacles to financing than those in the services sector.

The results show a statistically significant positive relationship between age and obstacles to financing. A one percent increase in "Age" results in a 2.8 percentage-point increase in the predicted probability of experiencing obstacles. Based on the results, we conclude that as a firm's age increases it experiences a far greater number of obstacles to financing. This finding runs contrary to those of Beck et al. (2016), who reported that older firms were less likely to experience obstacles to financing than younger ones. However, when adding a squared term of "Age," we found a significant negative relationship between "Age_squared" and obstacles to financing.

The change of sign in "Age_squared" vis-a-vis "Age" indicates that there is a significant non-linear relationship between age of firm and obstacles to finance. The probability that firms experience obstacles to finance decreases with the years of operation. As noted by Berger and Udell (1995); Boot (2000); Degryse and Van Cayseele (2000); and Kira (2013), younger firms lack experience, credit history, and adequate collateral in comparison with older firms, making credit-risk assessment by financing institutions difficult.

Furthermore, studies like Klapper, Laeven, and Rajan (2006); Woldie, Mwita, and Saidimu (2012); and Fatoki and Asah (2011) indicate that firms with more than four or five years of operations behind them have a far better chance of being successful in their credit applications than those less than five years old. Interestingly, we found a cut-off point in "Age" equal to 32.9 years for Suriname (Annex 5.11). Thus, firms younger than this experience a far greater number of obstacles to financing than those older than 32.9 years.

The findings for "Legal Status" are also significant, with a negative sign. Non-shareholding companies are 23 percentage points more likely to experience financing obstacles than shareholding companies. Our findings on legal status are in line with previous studies (see, for instance, Beck et al., 2006). Shareholding firms are less likely to experience obstacles to financing than those without shareholders.

We report new findings on ethnicity and religion, which should be explored in future studies focusing on societies that share characteristics with Suriname.

In the variable "Ethnicity Owner," Creole, Indian, Javanese, and Mixed vis-a-vis Chinese are significant, with negative signs – implying that those ethnic groups are less likely to experience obstacles than the Chinese ethnic group (reference group). The change in probability when ethnicity switches from Chinese to Creole, Indian, Javanese, and Mixed decreases 46.6, 51.5, 61.3, and 32.5 percentage points respectively in the marginal effects at means. From these results, we conclude that Creole, Indian, Javanese, and Mixed ethnic groups experience fewer obstacles to financing compared with those of Chinese ethnicity. Thus, in line with Biggs et al. (2002), we also found ethnicity to be one of the determinants of access to finance. A more detailed analysis of the variable "Network" by ethnicity reveals that Chinese participation in networks is the lowest of all ethnic groups (Annex 5.12), which might explain members of this group experiencing more obstacles to financing. Furthermore, the language barrier could be also an explanation for the Chinese-related findings. To mitigate the risk of a low rate of participation by Chinese firms in this study due to language barriers, the survey was translated into Mandarin.

Within the variable “Religion Owner,” estimated in Model 2, the category Muslim is significant with a negative sign, while the category Other is significant with a positive sign. Compared with Christians (reference group), Muslims are 31.4 percentage points less likely, while the category Other is 42 percentage points more likely, to experience obstacles to financing. The latter finding is in line with our expectation that firms belonging to the largest religions in Suriname experience fewer obstacles to financing. One possible explanation for this outcome is that firms with owners/managers in the largest religious group have the opportunity to tap into more network resources than members of other religions can. Participation in networks might be one possible explanation for the findings on this variable. The data from an analysis of “Network” by religion show that Muslims have the highest, while the category Other has the lowest, participation rate in networks (Annex 5.13).

Networks are significant, with a positive sign. A one percent increase in “Network” results in an 18.9 percentage-points increase in the predicted probability of experiencing obstacles to financing. When adding the squared term of “Network,” we find a negative relationship between “Network_squared” terms and obstacles to finance. This implies that, as in the case of age, networks have a positive relationship with obstacles to financing until a certain point (8.6 on a scale from 1 to 13) and a negative relationship thereafter (Annex 5.14). As firms build up more networks, the probability of them experiencing obstacles to financing decreases. While our finding is generally in line with those of Gamage (2013) and Machirori and Fatoki (2013), we, however, report a more nuanced result – namely, a non-linear relationship between networks and obstacles to financing.

The variables “Size,” “Gender,” “Education,” and “Financial Statement” were found to be insignificant. We also estimated the models including the variable "Family firms" and found this variable to be insignificant.

5.7 Conclusions, implications and suggestions for further study

In this chapter, we have analyzed a unique firm-level survey on financing obstacles for micro, small, and medium-sized enterprises (MSMEs) that was carried out in Paramaribo, within the context of my dissertation entitled "Obstacles to Financing facing Micro, Small, and Medium-Sized Firms in Suriname." While the WBES and PROTEqIN surveys focused on the business environment of the country, of which financing was one aspect, the survey on which this chapter is based is specifically designed to examine MSME financing. Various important aspects related to obstacles to financing faced by MSMEs that were not included in the WBES and PROTEqIN surveys are included in the novel survey – such as micro firms, ethnicity, religion, and networks. The author and his team developed and administered the execution of the survey. Quality controls were built in from developing through to testing, executing, and data entry.

The main findings of our analysis are summarized below.

5.7.1 Conclusions and implications

Based on descriptive statistics, we conclude that the firms surveyed in Paramaribo use predominantly private capital, commercial banks, internal resources, suppliers' credit, and advances from customers and credit cards in order to finance their working capital and fixed assets. Other sources of financing – such as state-owned banks, non-bank financial institutions, informal sources, angel investors, venture capitalists, government-provided or subsidized programs, leasing, and factoring – are largely unimportant. Commercial banks are the most important source of external financing from financing institutions.

Around 53 percent of surveyed firms experience access to finance as an obstacle to their current operations to some extent. The specific obstacles to financing in descending order of importance are: interest rates, collateral requirements, availability and type of credit, transaction costs, lack of appropriate land title, and difficulty in preparing business plans.

Firms hold a strong view that public-policy measures could enhance access to finance. Such measures might include financial education, the introduction of business-support centers, credit-guarantee funds, a pledge registry for movable and immovable assets, the introduction of a credit-registry bureau, and reform of the collateral framework to allow movable collateral.

Firms participate by a proportion of 39 percent in managerial networks, and 26 percent in either general or social networks. Almost one-third of the firms perceive networks as facilitating credit information, and around one-fifth see them as influencing credit decisions or conditions. Social networks have the most significant impact on credit information, followed by the impact of managerial networks on credit decisions/conditions.

Based on the probit model estimations (Models 1 and 2), we conclude that the variables "Sector" (Manufacturing, Construction, and Trade vis-a-vis Services); "Age"; "Legal status"; "Ethnicity" (Creole, Indian, Javanese, and Mixed vis-a-vis Chinese); "Religion" (Islam and Other vis-a-vis Christianity); and "Network" are significant. Low levels of participation in networks, as well as language barriers, could explain findings that the Chinese ethnic group faces a greater number of obstacles to financing than do other ethnic groups.

Firms in the manufacturing, construction, and trade sectors are more likely to experience obstacles to financing than those in the services sector. Firms experience more obstacles until they have reached 32.9 years of operation, followed by fewer thereafter. Non-shareholding firms experience more obstacles to financing than do shareholding firms. Creole, Indian, Javanese, and Mixed ethnic groups experience fewer such obstacles compared with the Chinese ethnic group. Muslim-led firms also experience fewer, while those in the religious category Other experience more, obstacles to financing than do Christian-led enterprises. Firms engaged in networking face a greater number of such obstacles until reaching a score of 8.6 on the network index (which ranges from 1 to 13), followed by fewer obstacles thereafter.

Table 5.26 summarizes the findings per hypothesis.

Table 5.26: Summary hypotheses

Nr.	Hypothesis	Findings
I	The industrial sectors Manufacturing and Construction are more likely to encounter obstacles to financing than Trade and Services are.	Confirmed in Probit Model 1. Manufacturing and Construction sectors are more likely to experience obstacles to financing than the Services sector. In Probit Model 2 also, the Trade sector experience fewer obstacles to financing.
II	Smaller firms are more likely than larger firms to encounter obstacles to financing.	Variable, not significant
III	Younger firms are more likely than older firms to report obstacles to financing.	Confirmed. An increase in firms' age increase likeliness of obstacles to a certain point, followed by fewer obstacles.
IV	Non-shareholding companies are more likely than shareholding companies to report obstacles to financing.	Confirmed.
V	Domestic firms are more likely than foreign firms to report obstacles to financing.	Not tested due to few foreign firms in the dataset.
VI	Family firms are more likely than non-family firms to experience obstacles to financing.	Variable, not significant.
VII	Female owners/largest shareholders are more likely to encounter obstacles to financing than their male equivalents.	Variable, not significant.

VIII	Indians and Creoles are less likely than members of other ethnic groups to experience obstacles to financing.	Confirmed. Creole, Indian, Javanese, and Mixed ethnic groups experience fewer obstacles than Chinese do.
IX	Christians and Hindus are less likely than members of other religions to experience obstacles to financing.	Confirmed for Christians.
X	Firms with more highly educated owners/largest shareholders are less likely to encounter obstacles to financing.	Variable, not significant.
XI	Firms with audited financial statements are less likely than those without such documentation to report obstacles to financing.	Variable, not significant.
XII	Firms engaged more closely in networks are less likely than those more loosely engaged to report obstacles to financing.	Confirmed. Firms are more likely to experience obstacles when networking to a certain point, followed by fewer obstacles.

Source: Author

The findings of this study have implications for the empirical literature on determinants of obstacles to financing and for policies aimed at enhancing access to finance. Our results suggest that the inclusion of ethnicity and religion as potential determinants of obstacles to financing is imperative in studies focusing on multi-ethnicity and multi-religious societies. The same applies to the issue of networks.

Policymaking should focus on the segments of the credit market experiencing the greatest number of obstacles – such as those involved in the manufacturing, construction, and trade sectors. The government could play an important role in enhancing access to finance – as highlighted by the firms surveyed – by providing the necessary credit-market infrastructure, such as financial education, business-support centers, credit-guarantee funds, a pledge registry for movable and immovable assets, a credit registry, and collateral laws. Firms should invest in networking, as it leads to better access to finance.

Finally, other sources of financing could be developed in order to enhance access to finance, such as angel investors, venture capitalists, leasing, and factoring.

5.7.2 Suggestions for further study

Our study has several limitations, which should be taken into account when interpreting the results. These limitations suggest a need for further research regarding the determinants of obstacles to financing facing MSMEs in Suriname.

First, the survey is conducted in Paramaribo, the capital city of Suriname, which is the center of the country's economic activities. However, limiting focus to Paramaribo potentially induces biases. The sectoral and ethnic composition of Paramaribo differs from the other districts of Suriname, and the country's agriculture and mining sectors are automatically excluded from the survey. We suggest conducting a similar study for the total firm population of Suriname. Specific sectors that are not present in Paramaribo – mining and agriculture among them – could be included. In the hinterland of Suriname especially, we expect major difficulties in accessing finance as banks are often absent in such sparsely populated areas due to a lack of economic feasibility. More importantly, in the hinterland, land rights are collectively owned, further complicating the use of land as collateral due to the low tradability of these lands. As real estate is the prime source of collateral for banks, access to finance could be challenging in the hinterland. Furthermore, the districts outside of Paramaribo vary in terms of ethnicity and sector. For instance, the western district of Nickerie is dominated by the cultivation of rice by Indians, whereas the country's hinterland is focused on the mining of gold by the Maroon ethnic group.

Second, given the significant share of micro firms in the firm population, we suggest a separate study on micro firms, in which a distinction is explicitly made between growth-oriented and survival firms in line with Berner et al. (2008). Also, firms without a fixed location where they carry out their economic activities should be included.

Third, we suggest a study to explore in greater depth the channels through which ethnicity and religion influence obstacles to financing. In the current study, our focus was on assessing whether these factors were significant determinants. A follow-up study could explore whether certain ethnic and religious groups facing more obstacles to financing do so because

of discrimination or a lack of resources (that is, assets that could be used as collateral, initial levels of wealth, and network resources).

Fourth, we suggest using volume of sales, instead of numbers of workers, to classify firms into micro, small, and medium-sized categories. In our study, firms did not provide sufficient information to allow us to use this criterion to classify them.

Fifth, we suggest measuring years of schooling on a continuous scale rather than classified into different ordered categories (see, for example, Ogubazghi & Muturi, 2014).

Chapter 6: Obstacles to MSME Financing in Suriname from a Bank Perspective

6.1 Introduction

A growing body of literature points towards the merits of access to external finance for firms. Firms need working capital to sustain production and investment capital to expand it. Both types of capital could be financed either by internal sources – that is, cash flow and retained earnings – or by external sources, banks or otherwise. When firms experience difficulties with access to external finance, this stagnates production, impedes investments (Mankiw, 1986; Hubbard, 1998) and hampers their growth potential (Beck et al., 2007; Cole & Sokolyk, 2016). Thus, a proper investigation into the extent and nature of access to external finance by firms seems pivotal for policies aimed at enhancing access to finance.

As obstacles to financing could occur from the demand side as well as the supply side of the credit market, as discussed in Chapter 2 of this dissertation, surveying both sides of the market is necessary in order to obtain a balanced and more nuanced view of these obstacles.

While surveying firms was the first approach to analyzing problems with small and medium-sized enterprises' access to financing, Beck, Demirguc-Kunt, and Peria (2010) undertook the initial attempt to understand this issue from the supply side of the market. They surveyed 91 banks in 37 developing and 8 developed countries. They concluded, among other things, that an enabling environment is more important than either the size of the firms concerned or the ownership of the banks in the supply of bank financing to small and medium-sized enterprises (Beck et al., 2010).

The few studies on obstacles to financing in Suriname have been conducted either from the demand or from the supply side of the credit market, which could lead to biased findings. By surveying the banks as well as the firms – as we did in the previous chapter – we have tried to avoid the weakness shown by previous studies on Suriname. In this chapter, we focus on the bank-level survey. Furthermore, micro firms are included in both our surveys; they were

excluded from the 2011 and 2018 World Bank Enterprise Surveys (WBES) as well as the 2014 IDB PROTEqIN survey, but this category of company has a significant presence in the country.

In Suriname, available studies show firms facing significant obstacles in accessing external finance. Drum (2012) identifies various supply-side and demand-side impediments to credit access by small and medium-sized firms in the country, including a heavy reliance on collateralized borrowing, with real estate being almost the only type of collateral accepted by lenders; inadequate sharing of credit information; a bias in commercial bank lending in favor of larger borrowers; and insufficient financial- reporting regulations and practices. More generally, the World Economic Forum (WEF) (2010–2015), and the World Bank (2009–2014) conclude in their perception-based annual surveys that entrepreneurs cite difficulties in access to credit as one of the main obstacles to doing business in Suriname.

This chapter presents the findings of a bank-level survey on financing obstacles for micro, small, and medium-sized enterprises (MSMEs) conducted in Suriname within the context of the dissertation entitled "Obstacles to Financing facing Micro, Small, and Medium-Sized Firms in Suriname." The survey has been adapted from the World Bank SME [small and medium-sized enterprises] Access to Finance Survey, which the author has supplemented with a micro-firm and a social-network block. It is the first of its kind undertaken thus far in Suriname.

The survey aims to collect information on the banks' opinions and experiences regarding obstacles affecting lending to MSMEs in Paramaribo, Suriname's capital. The findings of this survey will complement those from the firm-level MSME survey, which has been presented in the previous chapter. Both surveys will lead to a better understanding of the nature of the obstacles to financing facing MSMEs in the country.

The specific objectives of the bank-level survey are fourfold:

1. To understand banks' involvement with MSMEs in Suriname.
2. To understand the significant obstacles currently affecting bank lending to MSMEs in Suriname.
3. To understand whether networks facilitate access to financing for MSMEs in Suriname.

4. To identify possible policy interventions regarding MSME financing by banks in Suriname.

The survey was developed in English (Annex 6.1) and then translated into Dutch, the official language of Suriname. The contents of the draft survey were first discussed with a supporting team consisting of Professor Caram and Mr. Gerguri – former central bank governors of Aruba and Kosovo, respectively – who know the Surinamese financial system, and subsequently with Ph.D. supervisors Professor Murshed and Dr. Papyrakis. After incorporating their recommendations, the survey was sent to the management of four banks to enable them to carry out a pre-test. They made no suggestions for changes. Thereafter, in 2016, the current author emailed the survey – in Microsoft Word format – to all eight commercial banks operating in the country and to Suriname's national development bank.

The survey is semi-structured and its target group was the country's entire commercial-bank population. At the time, this consisted (as we have seen in earlier chapters) of eight banks and the national development bank – all of them headquartered in Paramaribo. The choices facing banks are motivated by the fact that they dominate the financial system. Suriname has a bank-centered financial system dominated by, at the end of 2018, nine commercial banks that between them held 75 percent of the system's assets – excluding the central bank. Furthermore, the financial system has 2 secondary banks; 1 development bank; 4 finance-and-investment companies; 23 credit unions; 12 insurance companies (four of them life insurance, six non-life insurance, and two funeral insurance); 40 pension funds; 5 provident funds; 25 foreign-exchange offices; 6 money-transfer houses; and 1 stock exchange.

The country's banks are domestically owned, with one exception – the Republic Bank – which is fully foreign owned. Furthermore, the government participates in the equity of five Surinamese banks; three small banks are entirely government owned, while the government has a 2.4 percent stake in the largest bank and 51 percent in the other large bank. Within the banking sector, a distinction is made between large and small banks based on their assets. Three major banks dominate the banking system, with around 80 percent of its assets and credit supply to the private sector. The financial system, including all banks, is supervised by the Central Bank of Suriname (Centrale Bank van Suriname – CBvS).

Six commercial banks out of the 2016 total of eight – all three large banks and three of the five small ones – as well as the national development bank completed the survey. The large banks have a share of 78 percent of commercial-banking-sector assets and 79 percent of the commercial bank credit to the private sector. The two commercial banks participating in this survey have a combined share of 17 percent in both the commercial-banking sector's assets and commercial-bank credit to the private sector. In sum, with the response rate experienced, we cover banks with a share of 95 percent of commercial-bank assets and 96 percent of commercial-bank credit to the private sector (Annex 6.2).

In the analysis, we compare the views of small and large banks. This comparison is motivated by a debate in the literature on SME financing as to whether small banks are better able than large ones to cater to the needs of micro and small firms due to their personalized interactions and the gathering of soft information (Beck et al., 2010). We expect to find further evidence in this regard.

Despite its Muslim population proportion (14 percent), Suriname neither had an Islamic bank nor offered Islamic financing products until December 2017. At the time of the implementation of the bank-level survey, Trust Bank Amanah – the first Islamic bank in Suriname (and, indeed, in the whole of Latin America and the Caribbean) – was not operational and thus not included. However, this bank provided its views on the main obstacles to financing faced by MSMEs. In general, Trust Bank Amanah points to the informality in the micro firms segment, the absence of adequate financial statements/records, and the lack of adequate collateral as factors inhibiting MSME financing.

In the remainder of this chapter, we first discuss the structure of the survey and its theoretical underpinning, followed by its findings, and conclude with a summary of the main findings and policy recommendations.

6.2 Structure of the survey and its theoretical underpinning

The structure of the bank-level survey follows the World Bank's MSME survey, which was, in turn, based on a study by Beck et al. (2010) entitled "Bank Financing for SMEs around the World Drivers, Obstacles, Business Models, and Lending Practices." We slightly adjusted it by including a network block. The survey departs from the theoretical finding that cost and risks emanating, among other things, from the presence of information asymmetry in the credit market – as also described in Chapter 2 – inhibit an optimal allocation of credit to MSMEs. When the legal and contractual framework is developed, banks are better equipped to assess risks and allocate credit. However, regulations, the nature of the lending technology, and MSME-specific factors also influence the allocation of credit to this sector and are therefore included in the survey.

The specific questions have been adjusted to reflect the Surinamese context. We also used the framework developed by Machirori and Fatoki (2013) to measure the impact of networks on the facilitating of information regarding the availability, terms, and conditions of credit products, credit decisions, and credit conditions. The inclusion of a network block is motivated by explanations offered by network theories about access to financing (Uzzi, 1999; Lin, 1999). Lin (1999) argues that networks increase access to resources along four channels – namely, through information, influence, social credentials, and identity/recognition. First, a network facilitates the flow of information, either through social-network opportunities and choices or through membership of organizations. Second, social relationships influence decision-making. Third, the membership of a network gives access the network resources. Finally, social relationships are instrumental in strengthening the identity and recognition that lead to trust in the person concerned.

The bank-level survey comprises four major building blocks:

1. Banks' involvement with MSMEs.

   In this block, questions aim to obtain information on criteria for defining MSMEs; their share in total loans, risks, and the administrative costs of these loans relative to large firms or other loan types; the rejection rate of MSME loan applications; and the common reasons for rejection.

2. Obstacles to banks' lending to MSMEs

   The obstacles are divided into macroeconomic (economy-wide) factors; regulations, regal and contractual environment factors; bank-specific factors; MSME-specific factors; the nature of the lending technology to MSMEs; competition in the MSME segment; and lack of adequate demand. Specific questions regarding the obstacles mentioned above were also included.

3. The role of networks in facilitating information regarding the availability, terms, and conditions of credit products, or credit decisions, and credit conditions.
   In the firm-level survey, this network block is also included, but from a firms' perspective.

4. Banks' views on how the government could stimulate MSME lending.

Next, we present the findings of the survey, according to the four blocks. We include available findings from earlier studies on obstacles to financing from the banks' view in the analysis. Also, we compare findings from the firm-level survey with those from the bank-level survey in the analysis. Finally, in order to present a balanced analysis and view, the author interviewed the Director of the Banking Supervision Department of the CBvS, Mr. Dirk van Leeuwen, on the regulation-related obstacles brought forward by the banks. Mr. van Leeuwen is a registered accountant (RA) and has extensive experience in the banking sector: 6 years at the CBvS and almost 39 years in commercial banking in several countries including Britain, Canada, Indonesia, Hong Kong, and Singapore.

6.3 Survey analysis

6.3.1 Banks' involvement with MSMEs

The section on banks' involvement with MSMEs aimed specifically to find out how banks in Suriname define MSMEs, the share of MSMEs in the total loan portfolio, the risks of MSMEs relative to institutions in other loan categories in terms of default risk and percent loss after default, the administrative cost of MSME loans relative to other loan types, and the rejection rate of MSME loan applications and the common reasons thereof.

Banks' definition of MSMEs

Regarding banks' criteria for defining MSMEs, we found that there is no uniformity among banks in Suriname on the definition of "MSME" (Table 6.1). Six out of seven banks use loan size (credit amount) to define the term, but all use different amounts – ranging from zero to SRD (Suriname Dollar) 50,000 for micro firms, from SRD 10,000 to SRD 350,000 for small firms, and from SRD 150,000 to SRD 5 million for medium-sized firms. One bank even defines small firms up to a credit amount of SRD 350,000. Four banks also use the number of employees as a criterion to define MSME, but they each adopt a different number – varying between zero and 5 employees for micro firms, between 5 and 25 employees for small firms, and between 21 and 100 employees for medium-sized firms. One bank does not use any criteria to define MSMEs, and reports that the conditions for credit are the same for all firms regardless of their size; however, the credit amounts require different approval structures at that bank. Another bank uses all four criteria plus a fifth – namely, the company's inventory – to define MSMEs. According to this bank, a firm is categorized as MSME if it fulfills at least one of the criteria mentioned in Table 6.1, but it does not target or specialize in MSMEs. If we exclude this bank, we conclude that other banks only use credit amount and number of employees as criteria to define MSMEs.

Table 6.1: Banks' criteria for defining "MSME"

Options	Number of banks	
Loan size	3	3
Client size in terms of average sales		1
Client size in terms of total assets		1
Client size in terms of total employees	2	2
Other, please specify		1
None		1

Source: Author's calculation, based on the bank-level survey.

Those findings are not surprising. The literature review on MSME definitions in Chapter 5 shows that various criteria are used to classify firms by size across the world (Kushnir, 2010; Kushnir et al., 2010), such as total employment, annual turnover, and capital investment. Many countries use more than one criterion in order to classify firms by size, with the total number of employees being the most common. However, there is no uniformity to the classification of enterprises based on the number of workers. Even within a country, various institutions use different intervals for micro, small, and medium-sized firms in this regard. Furthermore, across industries, different intervals are common practice. In small economies, micro firms are mostly defined as those with 1 to 5 employees, small firms from 6 to 20 or 25, and medium-size firms range from 21–26 to 50–100. Suriname's General Bureau of Statistics (GBS) uses the number of full-time employees to define small and large firms. It does not define micro and medium-sized firms: an enterprise is considered small if the number of full-time employees ranges from 1 to 10, large firms are those with more than ten full-time employees. The World Bank defines small firms in its enterprise survey as those with full-time employees numbering 5 to 19; medium-size firms have from 20 to 99 full-time employees, and large firms 100 full-time employees upwards. The Financial Statement Act of Suriname (2017) uses three criteria to define small, medium, and large firms: assets, net turnover, and number of employees (Table 6.2). An enterprise is deemed small, medium, or large if it satisfies at least two of these three criteria.

Table 6.2: Criteria for defining small, medium, and large firms according to the Financial Statement Act

	Small	Medium	Large
Assets	< SRD 3 million	> SRD 3 million	>SRD 12 million
Net turnover	<SRD 6 million	> SRD 6 million	>SRD 24 million
Number of employees	≤20	> 20 and <50	>50

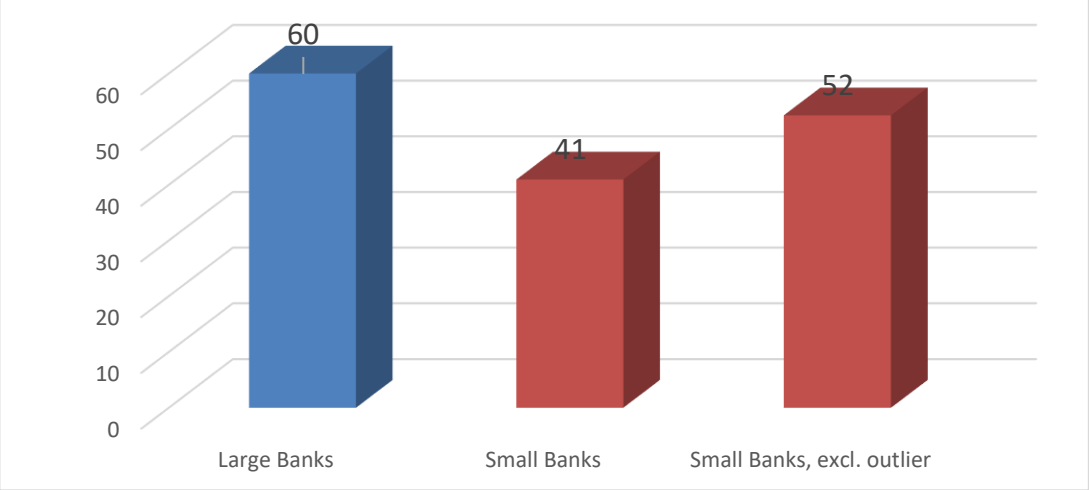
Source: Financial Statement Act of Suriname (2017, p. 10).

The CBvS does not have a definition for MSMEs (D. van Leeuwen, personal interview, June 12, 2020). The criterion of employees used by banks differs considerably from that used by the GBS, the Financial Statement Act, and that of the World Bank. The loan size as the most used criterion by the bank is not reflected in the definition of any other institution in the Surinamese context. For policy purposes, it is imperative to agree on standardized criteria to define MSMEs by the relevant authorities in close consultation with banks and business organizations.

Current share of MSME loans in the total loan portfolio

Regarding the current percentage share of MSME loans in the total loan portfolio (Figure 6.1), we found that, on average, a significant part of the loan portfolio is allocated to these firms – ranging from 41 to 60 percent. The average share of MSMEs in the total loan portfolio of the large banks is represented by the larger, 60 percent, figure while that of the small banks is 41 percent. One small bank has a particularly low share of MSME loans since it is not specialized or targeting MSMEs; excluding the share of this "outlier" increases the small-banks average to 52 percent. Interestingly, the larger banks have, on average, a larger share of MSME loans in their loan portfolio than do the smaller ones. However, when interpreting the differences in MSME loans in the total loan portfolio of the banks, we should be mindful that – as noted above – banks use different criteria to define MSMEs.

Figure 6.1: Average share (in %) of MSME loans in the banks' overall loan portfolio



Source: Author's calculation, based on the bank-level survey.

Risks and costs of MSME loans relative to other loan types

Three questions were included in the survey in order to assess the risk and administrative costs of MSME loans vis-a-vis large corporate, consumer, and housing loans. Contrary to conventional wisdom, the findings of this survey reveal that banks in Suriname consider MSME loans to be more or less equally as costly and risky as large corporate loans – an outcome that warrants further investigation. In their assessment of the risk – in terms of probability to default – of the average MSME loan relative to the average loan of another type, banks reported that MSME loans are more or less equally as risky as large corporate loans, less risky than consumer loans, and between equal to and riskier than housing loans (Table 6.3).

Table 6.3: "Provide your assessment of the risk (in terms of probability to default) of the average MSME loan relative to the average loan of other types"

	MSME loans are less risky than	MSME loans are equally as risky as	MSME loans are riskier than
Large corporate loans	None	6 (2LB,3SB) of 7	1 (LB) of 7
Consumer loans (credit card or overdraft, non-	5 (3LB,2SB) of 7	None	1 (SB) of 7
Housing loans	1 (SB) of 7	3 (1LB, 1SB) of 7	3 (1LB, 2SB) of 7

Source: Author's calculation, based on the bank-level survey.

Legend: LB = large bank; SB = small bank.

Based on the assessment of the risk – in terms of percentage loss after default – of the average MSME loan relative to the average loan of other types, we conclude that MSME loans are more or less equal as risky as large corporate loans, less risky than consumer loans, and between equal to and riskier than housing loans (Table 6.4).

Table 6.4: Assessment of the risk (in terms of percent loss after default) of the average MSME loan relative to the average loan of other types

	MSME loans are less risky than	MSME loans are equally as risky as	MSME loans are riskier than
Large corporate loans	3 (2LB, 1 SB) of 7	4 (1LB, 3SB) of 7	None
Consumer loans (credit card or overdraft, non-collateralized)	5 (2LB, 3 SB) of 7	1 (SB) of 7	1 (LB) of 7
Housing	None	4 (3LB, 1SB) of 7	2 (SB) of 7

Source: Author's calculation, based on the bank-level survey.

Legend: LB = large bank; SB = small bank.

Banks consider the administrative cost of MSME loans – as a fraction of loan size – relative to other loan types to be between less than and equally as costly as large corporate loans, more costly than consumer loans, and between equal to and more costly than housing loans (Table 6.5).

Table 6.5. Assessment of the administrative cost of MSME loans (as a fraction of loan size) relative to other loan types

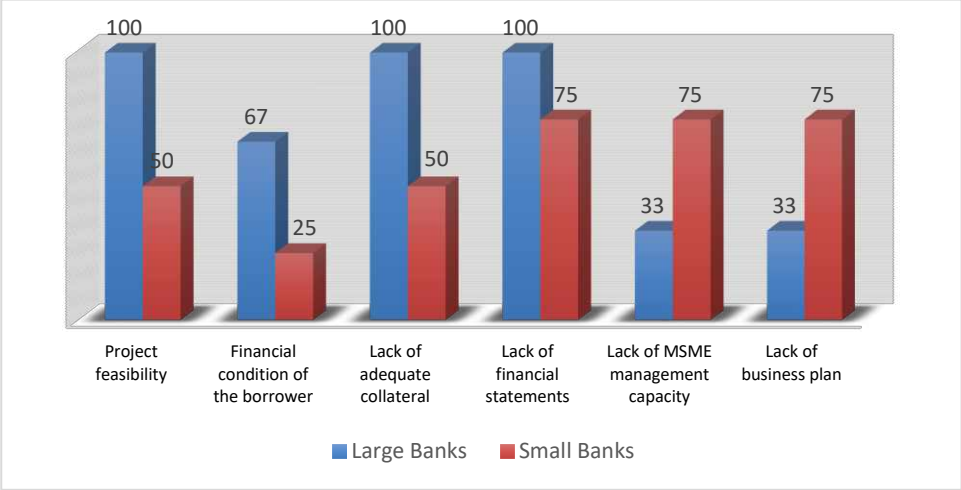
	MSME loans are less costly than	MSME loans are equally as costly as	MSME loans are more costly than
Large corporate loans	4 (2LB, 2 SB) of 7	3 (1 LB, 2 SB) of 7	None
Consumer loans (credit card or overdraft, non-collateralized)	1 (LB) of 7	1 (1 LB) of 7	4 (1LB, 3SB) of 7
Housing	1 (SB) of 7	2 (1LB, 1 SB) of 7	3 (2LB, 1 SB) of 7

Source: Author's calculation, based on the bank-level survey. *Legend: LB = large bank; SB = small bank.*

Rejection rate of MSME loan applications and common reasons

The rejection rate of MSME loan applications received by individual banks varies between 1 and 4 in 10. One bank indicates that in the case of no collateral, firms could not submit an application – so a rejection rate of 1 at this bank could be misleading. The most common reasons for large banks rejecting MSME loan applications are poor project feasibility, lack of adequate collateral, lack of a financial statement, and the financial condition of the borrower. The common reasons for small banks are a lack of financial statements, MSME management capacity, lack of a business plan, project feasibility, and adequate collateral (Figure 6.2).

Figure 6.2: Most common reasons for rejecting MSME loan (percentage of large and small banks)



Source: Author's calculation, based on the bank-level survey.

6.3.2 Obstacles to banks' lending to MSMEs

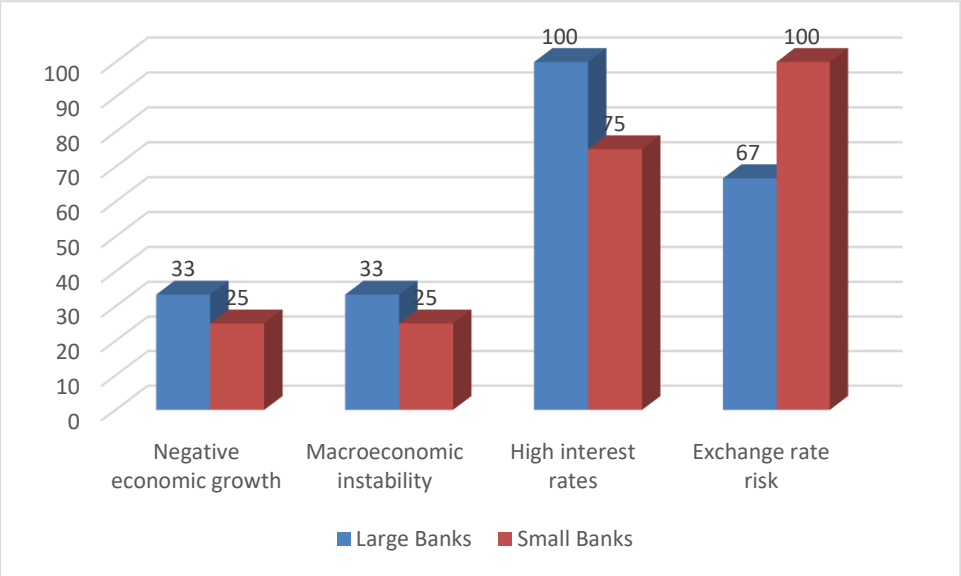
The second set of questions aimed at obstacles to banks' lending to MSMEs, and comprised eight sub-questions focusing on macroeconomic (economy-wide) factors, regulations, legal- and contractual-environment-related factors, bank-specific factors, MSME-specific factors, the nature of the MSMEs' lending technology, competition in the MSME segment, and a lack of adequate demand (Beck et al., 2010).

Banks were asked to list up to three of the most important factors (most crucial factor ranked first, followed by the second and the third most important factor) per subcategory.

Macroeconomic (economy-wide) factors

Banks report the following macroeconomic factors inhibiting credit allocation to MSMEs in Suriname: high interest rates, exchange-rate risk, macroeconomic instability, and negative economic growth (Figure 6.3).

Figure 6.3: Macroeconomic factors influencing credit allocation to MSMEs (Percentage of large and small banks)



Source: Author's calculation, based on the bank-level survey.

Both large and small banks indicate high interest rates and exchange-rate risk as being the most critical macroeconomic obstacles for credit allocation to MSMEs, followed by negative economic growth and macroeconomic instability.

Macroeconomic conditions worsened in Suriname during 2015 and 2016 (Annex 6.3), because of declining main-export commodity prices (gold and oil) and the closure of the country's only alumina company. The economy contracted by 3.4 percent in 2015 and again by 5.6 percent in 2016. Since 2017, the economy has been back on a growth path, mainly driven by its mining sector. The current account of the balance of payments recorded a deficit of 16.0 percent of GDP in 2015 and 5.3 percent of GDP in 2016, while the fiscal balance deteriorated to 9.8 percent of GDP in 2015 and remained weak at 9.4 percent in 2016. The current account of the balance of payments improved in 2017 but deteriorated in 2018. The fiscal balance is still weak. End-of-year inflation spiked to 25.1 percent in 2015 and doubled in 2016, while the exchange rate depreciated from to SRD 3.43 per US$ in 2015 to SRD 6.29 per US$. The inflation rate declined steeply in light of exchange-rate stability. Interest rates increased in light of inflation, but remain negative in real terms until 2017. Usually under such conditions, credit demand plunges while the number of banks' non-performing loans increases, and the

solvency of banks is affected. As a result, the banks deleverage and become more prudent in extending credit. Bank credit to the Surinamese private sector as a percentage of GDP has been declining since 2016, from 41.1 percent to 30.3 percent in 2018 (Annex 6.3).

Those findings are in line with Beck et al. (2010) in that banks perceive the macroeconomic environment to be the most obstructive factor in extending credit to small and medium-sized enterprises. Beck et al. used data from 91 banks, of which 80 were from a total of 45 developing countries and 11 from 7 developed countries.

Beck and de la Torre (2007) argue that macroeconomic risks hinder credit supply due to the increase in the probability of default from all credit contracts. This results in a higher cost of funds and, thus, a higher interest rate, which leads to the exclusion of borrowers as they find the cost of credit unaffordable. This is especially true for small developing states and MSMEs, as has been elaborated on in Chapter 3 of this dissertation.

Regulations

In Suriname, the central bank regulates and supervises the financial system, including banks. The main objective of the regulatory framework is to protect the financial/banking system and to prevent financial/banking crises. However, as the Alliance for Financial Inclusion (AFI) rightfully observes (AFI, 2019), regulators should design and implement a legal and regulatory framework conducive to MSME financing while at the same time safeguarding the integrity and stability of the financing system.

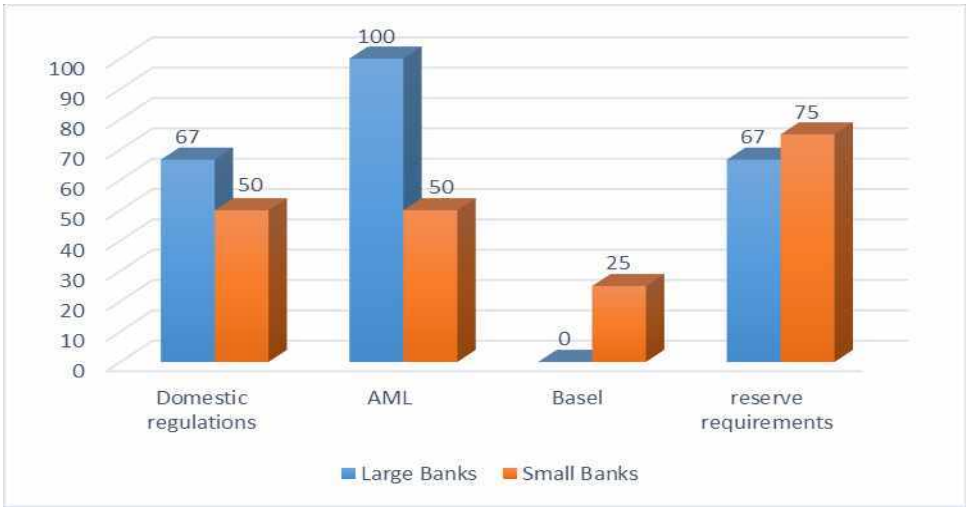
Banks in Suriname report domestic regulations, anti-money laundering (AML) rules, Basel regulations, and reserve requirements as being related to obstacles in providing credit to MSMEs. However, there are notable differences between responses from large and small banks. While all Suriname's large banks perceive AML regulation as an obstacle, only half of the small banks do. Two-thirds of the country's large banks also consider domestic regulation as restrictive of MSME financing, while only half of the small banks share this view. Conversely, large banks do not mention Basel regulation as obstructive of MSME financing, while a quarter of the small banks do so. Three-quarters of the large banks experience reserve requirement as restrictive, as opposed to two-thirds of the small banks.

While banks are cognizant of the merits of regulations for the stability and integrity of the financial system, they are nevertheless concerned about the negative impact of those regulations on the credit supply to MSMEs (Figure 6.4). They suggest striking a healthy balance between prudence and access to financing. We now elaborate on those regulations in detail.

Regarding domestic regulations, one bank explains in detail that the CBvS's regulation on credit classification is harming the allocation of credit by banks to MSMEs. According to the bank, the credit classification is merely based on the delay in repayment of the credit. Based on the credit classification, banks are obligated to maintain provision (Annex 6.4) – which could be considered a financial burden for them, impeding credit allocation. The provision for granting credit is an integral part of the profit-and-loss statement of the banks and thus affects profitability and, eventually, the capital of the bank. The bank in question argues that the classification could be based on delay in repayment and the associated collateral.

Collateral is not included in the current loan classification for the determination of loan loss provisions, as regulated by the CBvS, because the market for real estate – as the prime means of collateral accepted by banks – is neither well developed nor transparent in Suriname. Banks recover low amounts – on average, between 10 and 20 percent of the appraised value – when executing the collateral in case of default by the creditor, which falls short of recovering the outstanding credit amount. Therefore, collateral has a weight of zero in the current provision framework of the central bank (D. van Leeuwen, personal interview, June 12, 2020). The central bank is currently drafting a new guideline on debtor provision based on International Financial Reporting Standard 9 (IFRS 9), which prescribes, among other things, that the value of the collateral is included in determining the provision. However, in determining the value of the collateral, the experiences of previous auctions must be taken into account. Banks must, therefore, keep track records of those auctions in order to justify the values used. Also, under IFRS 9, and also according to the new draft guideline, provisioning is required from the date of the credit-granting (D. van Leeuwen, personal interview, June 12, 2020).

Figure 6.4: Regulations related to obstacles in providing credit to MSMEs (Percentage of large and small banks)



Source: Author's calculation, based on the bank-level survey.

According to the banks, the AML regulations hinder credit supply to MSMEs due to informality in the MSME segment, the prevailing cash culture, and the lack of public registers for due-diligence purposes in Suriname.

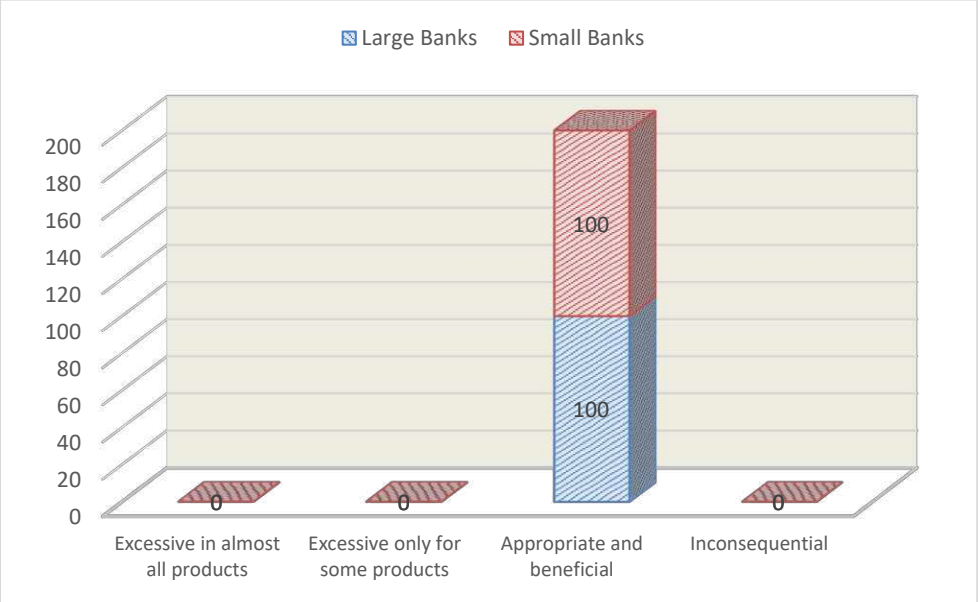
The CBvS issued an Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) regulation in 2012, with updates in 2015 and 2016 (D. van Leeuwen, personal interview, June 12, 2020). The AML/CFT regulation is not based on the size of the firms but on the risks of money laundering and the financing of terrorism. The guideline distinguishes between high, medium, and low – and unacceptable – risk. This category classification is essential because admission to the banking sector (that is, opening an account) and the frequency and depth of monitoring of the transactions must be based on this classification. The AML/CFT regulation prescribes the minimum requirements in this regard, while the banks are responsible for setting up and implementing relevant policies. However, for firms not registered with the Chamber of Commerce, the AML/CFT regulation could be an impediment to using banking services, including credit facilities, as it demands from firms a certificate of their registration with the Chamber of Commerce when making use of banking services (D. van Leeuwen, personal interview, June 12, 2020).

Suriname has high reserve requirements by regional and international standards, and its banks also report these as inhibiting the granting of credit to MSMEs. The current reserve requirement on local-currency deposits is 35 percent, and 50 percent on foreign-currency deposits. This simply means that banks are obliged to keep 35 percent and 50 percent of their reserve base – that is, the sum of the checking and saving accounts and time deposits – as a reserve requirement. As banks cannot use the reserve-requirement funds to extend credit, they decrease the credit potential of those banks on the one hand and, on the other hand, increase the cost of funds – resulting in higher lending rates, which in turn impede credit supply, especially to MSMEs (Beck & de la Torre, 2007). This finding is in line with World Bank (1998) and Drum (2012).

The CBvS is introducing market-based monetary instruments in order to modernize its monetary-policy framework and toolkit. Within this context, its reserve requirement, especially on the local currency, will be lowered gradually, which in turn will enhance MSME financing by the banks. Banks will have more resources at their disposal to extend credit and the cost of funds will be lower, allowing them to reduce lending rates.

Banks also provided their impression on the regulatory documentation requirements for MSMEs. The results are summarized in Figure 6.5.

Figure 6.5: Impressions on the regulatory documentation requirements (if any) for commercial lending (such as audited accounts) to MSMEs (Percentage of large and small banks)

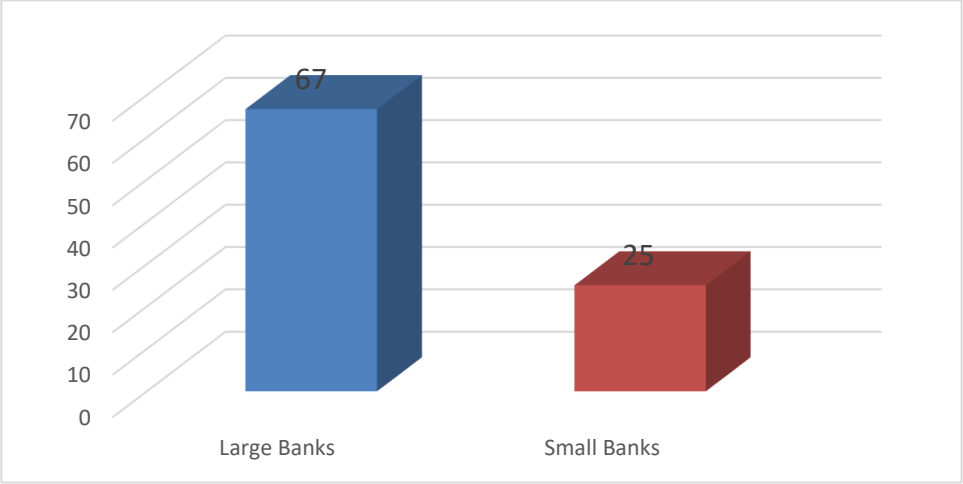


Source: Author's calculation, based on the bank-level survey.

All banks – large and small – deem the regulatory documentation requirements for commercial lending to MSMEs to be appropriate and beneficial.

Banks were additionally asked whether they had differences in the required documentation for commercial lending based on the size of the loan. Two-thirds of the large banks and one-quarter of the small banks report differences in the required documentation for commercial-lending-type audited accounts based on the size of the loan (Figure 6.6).

Figure 6.6: Banks indicating differences in the required documentation for commercial lending (such as audited accounts) based on the size of the loan. (Percentage of large and small banks).



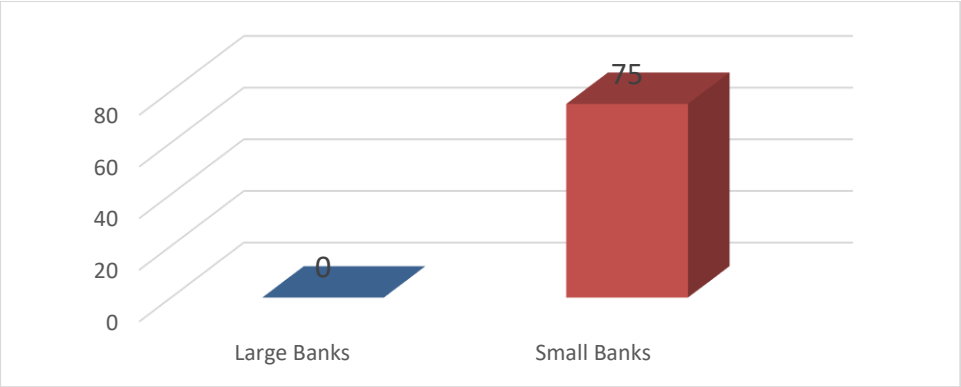
Source: Author's calculation, based on the bank-level survey.

The CBvS has not issued specific guidelines to banks for documentation requirements when lending to MSMEs, except for the general requirement that documents must justify the lending. In the case of the informal sector, this can be a problem because such documents are not available. In the case of MSMEs, audited accounts are not required as the Financial Statement Act does not prescribe it. If banks have differences in documentation requirements based on the size of a loan, these stem from the policies of the institutions themselves (D. van Leeuwen, personal interview, June 12, 2020).

Finally, banks were asked whether the regulatory definition of secured loans – in terms of collateral – inhibits MSME lending. None of the large banks perceive this as an obstacle for MSME lending, but 75 percent of the small banks responded in the affirmative (Figure 6.7).

The CBvS defines secured lending as "sufficiently covered," which means that the credit amount is secured by a pledge of movable or immovable (that is, real estate) collateral or by a guarantee (D. van Leeuwen, personal interview, June 12, 2020).

Figure 6.7: Banks indicating that the regulatory definition of secured loans (in terms of collateral) inhibits MSME lending (Percentage of large and small banks)



Source: Author's calculation, based on the bank-level survey.

The legal and contract-enforcement environment

Weaknesses in the legal and contractual environment expose banks to high risks, which in turn impede lending to MSMEs (Beck et al., 2010). In this regard, various aspects could play a role, such as the collateral law, the bankruptcy regime, contract enforcement, and judicial efficiency. In Chapter 3, we concluded that in small developing states the operating environment of banks is weak, and this includes legal and contract-enforcement aspects.

In line with the findings of previous studies on Suriname (World Bank, 1998; Drum, 2012), banks rate the legal and contract-enforcement environment as weak, which inhibits lending to MSMEs (Table 6.6). Banks consider the collateral law, contract enforcement, judicial efficiency, and bankruptcy regime as restrictive factors in this regard. The lack of movable-collateral registers and lengthy judicial processes in cases of default tend to stagnate the allocation of credit to MSMEs. Banks suggest the setting up of specialized courts on financial matters.

Table 6.6: The legal and contract-enforcement environment

Options	Not significant	Marginally	Very significant	Extremely
Collateral law		1 (SB)	2 (1LB, 1SB) 1	2 (1LB, 1SB)
Bankruptcy regime				2 (1LB, 1SB)
Contract enforcement			2 (SB)	1 (LB)
Judicial efficiency			(1LB, 2SB)	1 (LB)
Others			2 (LB)	

Source: Author's calculation, based on the bank-level survey.

Legend: LB = large bank; SB = small bank.

The Surinamese authorities intend to adopt a Secured Transactions Act, which will allow for the use of movable assets and the setting up of a register for such assets. However, the CBvS already allows banks to accept movable assets when extending credit.

On the question of whether any tax-related issues affect their appetite for MSME lending, banks unanimously responded that this was not the case. One bank indicates that tax incentives would stimulate lending to MSMEs.

Bank-specific factors

Bank-specific factors that could inhibit MSME financing include (Beck et al., 2010): a hierarchical bank organizational structure; a lack of interest at the highest management level of the bank; a lack of expertise in the segment; limited geographic coverage within the country (number of branches, rural presence); bank size; an inability to diversify risk across borrowers; a lack of appropriate information-technology (IT) tools (scoring models, rating models); and difficulty in designing products to match segment needs.

Banks report the last-named two factors as the major obstacles to financing MSMEs. Furthermore, they also cite a lack of sector analysis, bank size, and limited coverage – especially in the country's hinterland – as obstacles.

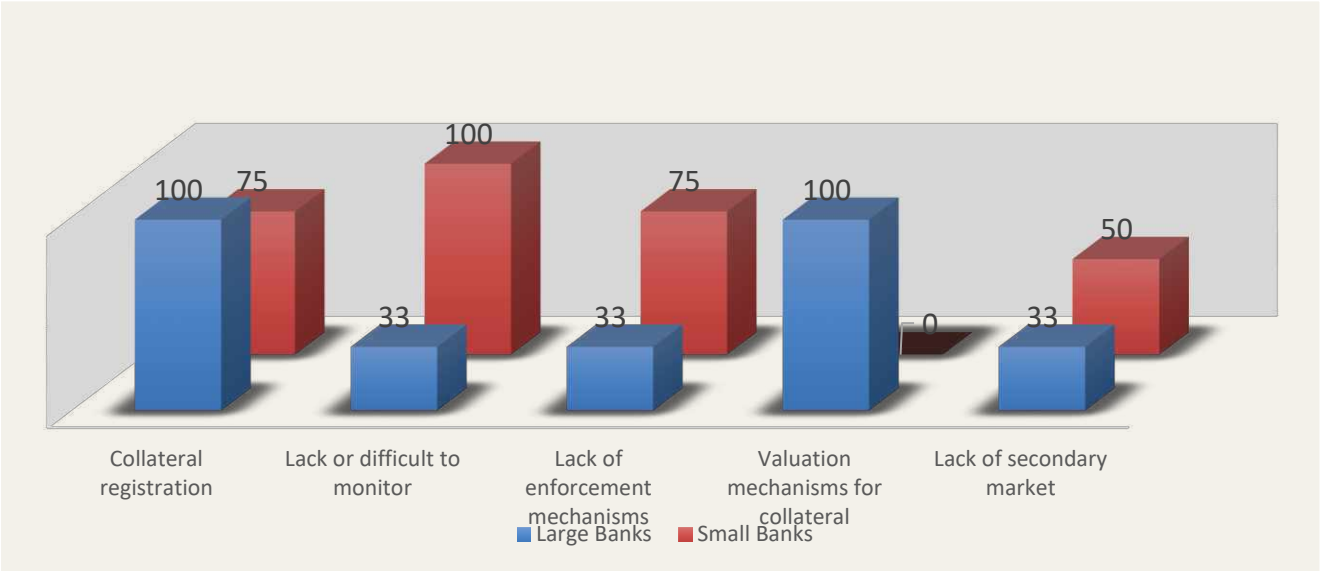
MSME-specific factors

MSME-specific factors with the potential to inhibit bank financing to micro, small, and medium-sized enterprises include (Beck et al., 2010): poor quality of financial statements, the inability of MSMEs to manage risk, informality, an inability to prosecute recipients of credit in cases of default, a lack of adequate collateral, and difficulties in executing collateral in cases of default.

In our survey, banks report various MSME-specific factors inhibiting credit to micro, small, and medium-sized enterprises. The poor quality – or, in many cases, the absence – of financial statements and the lack of acceptable collateral are the most critical obstacles faced by banks in catering for MSMEs. Furthermore, the low level of MSME managerial capabilities; the inability to manage risks; the central role of one person, especially in the case of single-person firms; the informality encountered in MSMEs; and the difficulty in executing collateral in cases of default are also restrictive factors. These findings are consistent with other studies (World Bank 1998; Drum, 2012).

In addition, a specific question was included in the survey to assess the most important obstacles to the use of non-real estate collateral – in particular, for using movable collateral

Figure 6.8: "Indicate the most relevant obstacles to the use of non-real estate collateral in your MSME business lending – in particular, for using movable collateral" (Percentage of large and small banks)



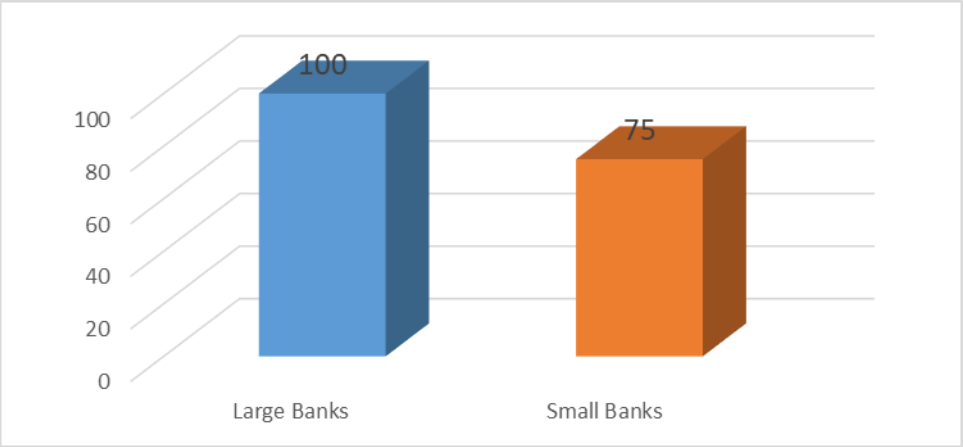
Source: Author's calculation, based on the bank-level survey.

Banks perceive collateral registration and a lack of or difficulty in monitoring, deploying enforcement mechanisms, and using valuation mechanisms as the most important obstacles to the use of non-real estate collateral in their MSME business lending – in particular, in the use of movable collateral. Furthermore, the lack of a secondary market for movable collateral also plays a restrictive role – albeit to a lesser extent. For the large banks, collateral registration and valuation mechanisms for collateral are the most critical obstacles in this regard. In contrast, for the small banks, the significant factors are the lack of or difficulty in monitoring the collateral, collateral registration, and the lack of enforcement mechanisms.

One bank expressed its views as follows: the registration of movable assets in Suriname is limited. As the bank could recall, only vehicles such as cars, motorbikes, mopeds, and tractors could be registered. Those vehicles take part in free traffic. Seagoing vessels and airplanes could be registered, but only certain specific sizes of them; a speedboat, for example, could not be registered. Furthermore, in Suriname, there are very few accredited appraisers of movable assets. Also, while the secondary market for vehicles (for example, cars and motorbikes) is well developed, such is not the case for other movable assets. Hence, in the field of credit appraisal, no value is attached to the second category of movable assets.

On the question of whether the registration of collateral, primarily movable collateral, inhibits the granting of secured lending to MSMEs, all large banks and 75 percent of the small banks responded in the affirmative (Figure 6.9). There is a lack of credit bureaus or registers for movable assets within which such collateral could be registered. However, the Surinamese authorities are aiming to enhance the country's secured-transactions regime and are in the process of preparing a Secured Transactions Act, which will incorporate the establishment of a register for movable collateral.

Figure 6.9: Collateral registration inhibiting secured lending to MSMEs – especially with the registration of movable collateral (Percentage of large and small banks)



Source: Author's calculation, based on the bank-level survey.

Concerning the issue of whether collateral requirements are higher for MSMEs than for large corporations, banks unanimously responded that they were not. While this finding runs contrary to the conventional wisdom, it is consistent with the finding earlier in this chapter that banks perceive MSMEs as being more or less equally risky and costly as large corporations.

Finally, banks were asked to rate the quality of MSMEs' financial statements and financial data. They unanimously judge it to be poor. Three banks rate the quality of MSMEs' financial data (for instance, business plans and cash-flow forecasts) as low, one bank regards it as non-reliable, and another sees it as average. None opted for the option "high." The evidence is thus tilted towards the low and non-reliable quality of financial data.

The nature of MSMEs' lending technology

The nature of lending technology could potentially impede MSME financing. In this regard, high entry cost; high fixed costs per transaction (relative to loan size); difficulty in standardizing products and procedures (including screening, origination, monitoring, and risk management); and difficulty in attaining scale economies could play a contributing role (Beck et al., 2010).

Concerning this issue, banks report risk management, high entry costs, the nature of products, difficulty in standardizing products and procedures, difficulty in attaining scale economies, and the limited payment options available for clients as obstacles.

In a study of four East African nations (Kenya, Tanzania, Uganda, and Zambia), Calice, Chando, and Sekioua (2012, p. 30) found the nature of the lending technology to be the most critical bank-specific obstacle to MSME financing.

Competition in the MSME segment

Competition in the MSME market segment could, among other things, be due to the presence of public banks or niche players, and is reflected in overall narrow margins (Beck et al., 2010).

Banks perceive the presence of niche players and specific funds as the most critical impediment in this category of obstacles. Niche players are credit providers who operate outside the formal financial system, such as firms selling products on installment and moneylenders. Specific funds – such as micro-credit funds, and small and medium-sized enterprise funds – targeting various groups and managed by banks also create competition. One bank explains that while, in principle, all banks should have access to those funds, in practice it is limited to the specific bank that manages such funds. Furthermore, the large banks report competition from the state-owned banks. One small bank reports encountering competition from large banks due to lower costs at those larger institutions. One large and one small bank report narrow margins as an obstacle, while another small bank considers credit unions to be competitors.

Lack of adequate demand

Banks report both “lack of sufficient demand” and “demand from customers that are not creditworthy” as obstacles. The latter refers to firms lacking adequate acceptable collateral. This issue features prominently in the category of startup firms. In addition, startups lack a credit history, which further complicates the granting of credit to this

category of firms. Beck et al. (2010) record a significant difference between banks in developing and developed countries in reporting lack of demand as a critical obstacle to SME financing: 6 percent of the banks in developed countries versus 18 percent of those in developing countries.

6.3.3 The role of networks in facilitating MSMEs' access to financing

The current survey also has a network block divided into "General Networks," "Managerial Networks," and "Social Networks," aimed at assessing whether networks facilitate information regarding the availability, terms, and conditions of credit products, and/or facilitate credit decisions and credit conditions.

Based on the banks' responses, summarized in Annex 6.5, we conclude that networks are indeed useful in facilitating information on the availability, terms, and conditions of credit products and, through this channel, access to financing. "Firms' relationships with accountants" and "Firms' relationships with external accountants" are the most effective networks in this regard, but all other networks also seem to have a positive impact.

However, only a few networks affect credit decisions and credit conditions (for example, collateral and interest rates). The most apparent networks in this regard are, again, "Firms' relationships with accountants" and "Firms' relationships with external accountants." Managerial networks also have some influence on credit decisions and credit conditions, as opposed to the other two types of network.

6.3.4 The government's role in increasing the appeal of MSME lending

Banks were asked to indicate in what ways the government could increase the appeal of lending to MSMEs. Banks see an essential role for the government in this regard.

In the legal arena, banks suggest more streamlined legal proceedings for seizure/legal cases, the adoption of a law on financial statements, and tax incentives. By 2017, the Financial Statement Act had been adopted, with an effective date of 2020 for large firms and 2021 for small and medium-sized firms. On the regulatory front, banks suggest the need to strike a

balance between financial stability and access to financing for MSMEs. In the institutional area, they favor the adoption of a credit-registration bureau and credit-guarantee funds and tax incentives. Furthermore, banks recommend a separate body or association for MSMEs.

Banks, including the Islamic Trust Bank Amanah, unanimously consider guarantees or credit-enhancement programs to be pivotal for MSMEs. They refer to a guarantee fund/program launched by the government through the Suriname National Development Bank (NOB) as having, or being able to have, a positive impact on their involvement with MSMEs. However, one bank signals that this program lacks exposure to its target group, not being well known by the members of that group. Another bank concludes that despite low take-up of this program, credit officers have built the expertise to deal with this type of lending.

According to one bank, guarantees could help to resolve the difficulty presented by real-estate collateral. A second bank recommends expanding or enhancing the current guarantee programs, and a third favors adequate coaching of MSMEs. Another bank recommends additional incentives to foreign-currency earners, besides the guarantee fund.

Banks are in favor of subsidies. One recommends subsidies for foreign-currency-earning sectors, while another would especially welcome them on interest rates. Banks are in favor of the adoption of a credit bureau as this has the potential to enhance the repayment "morality" of MSMEs, while credit providers could better assess credit risks. The Surinamese authorities are currently drafting an Act on the issue of a credit bureau. While awaiting its adoption, the banks are setting up one such bureau themselves.

In the judicial area, one bank favors enhanced knowledge of the financial system and rapid legal case settlements while another recommends the adoption of a mediation institute. Further recommendations include advice offered free of charge to MSMEs through accountants, enhancing MSME access to real estate, and facilitating the setting up of industrial parks and other facilities to enhance access to financing for MSMEs in Suriname.

6.4 Conclusions and policy implications

In this chapter, we have analyzed a unique bank-level survey on the obstacles to financing facing micro, small and medium-sized enterprises (MSMEs) carried out in Paramaribo within the context of the dissertation entitled "Obstacles to Financing facing Micro, Small, and Medium-Sized Firms in Suriname." The focus on banks is motivated by their domination of the financial sector in Suriname. In the analysis, we have compared small banks with large ones in order to discover which category is better able to cope with MSME financing.

Furthermore, by surveying firms (as we did in Chapter 5) as well as banks, we can obtain a better overall understanding of obstacles to MSME financing.

Here, we present the main findings of this study.

With regard to **banks' involvement with MSMEs**, we reached the following conclusions:

- There is no uniformity in defining MSMEs; banks mostly use credit amounts and/or the number of employees to do so.
- MSME loans represent a significant share of the total loan portfolio of large banks (60 percent on average) as well as small banks (52 percent on average, when excluding an outlier).
- Banks perceive MSME loans as being more or less equally costly and risky as those granted to large corporate concerns, less risky than consumer loans, and between equally and more costly and risky than housing loans.
- The rejection rate of MSME loan applications varies between 1 and 4 in 10; the main reasons for rejection are:
    - a lack of adequate collateral;
    - a lack of financial statements;
    - poor project feasibility;
    - the financial condition of the borrower;
    - a lack of MSME management capacity; and
    - the lack of a business plan.

The large banks have a greater share of MSMEs in their total loan portfolio than the small banks do. While there are some differences between the two sizes of banks concerning the reasons for rejecting MSME loan applications, they generally have shared views.

The main obstacles facing MSME financing are found to be:

- Macroeconomic (economy-wide) factors:
    - High interest rates.
    - Exchange-rate risk.
    - Macroeconomic instability.
    - Negative economic growth.
- Regulations:
    - Domestic regulations (credit-classification criteria of the Central Bank of Suriname).
    - AML/CFT regulation.
    - Basel regulation.
    - Reserve requirements.
- The legal and contract-enforcement environment:
    - Collateral law (the lack of movable collateral registers).
    - Judicial efficiency (lengthy judicial processes).
- Bank-specific factors:
    - Difficulties with appropriate IT tools.
    - Difficulties with designing product to match segment needs.
    - A lack of sector analysis.
    - Bank size.
    - Limited coverage – especially in Suriname's hinterland.
- MSME-specific factors:
    - The poor quality – or, in many cases, absence – of financial statements.
    - A lack of acceptable collateral.
    - The relatively low level of managerial capabilities.
    - An inability to manage risks.
    - The central role of one person, especially in single-person firms.
    - The informality encountered in MSMEs.

- The difficulty in executing collateral in cases of default.
- Competition in the MSME segment: the presence of niche players and specific funds.
- A lack of adequate demand: “lack of sufficient demand” and “demand from customers that are not creditworthy” are seen as obstacles. The latter refers to firms’ lacking adequate acceptable collateral.

Weaknesses in the operating environment impede bank financing to MSMEs. A weak macroeconomic, legal, and contractual environment is restrictive for large as well as small banks. Regarding the regulations, banks suggest a need to strike the right balance between financial-stability goals and economic-development goals. Bank-specific and MSME-specific factors also hinder MSME financing from both large and small banks.

On the role of networks in facilitating MSMEs’ access to financing, we conclude the following:

Networks are useful in facilitating information on availability, terms, and conditions of credit products – and, through this channel, access to finance. In Suriname, only a few networks, such as relationships with accountants, affect credit decision and credit conditions (for example, collateral and interest rates).

The question of how the government could enhance the appeal of MSME financing for banks produced the following results.

Policy measures suggested by banks were:

- Streamlined legal proceedings.
- The adoption of a mediation institute.
- The adoption of a credit-registration bureau.
- The enhancement of the credit-guarantee fund.
- Tax incentives.
- Subsidies.
- Free coaching of MSMEs.
- Enhancing access to real estate.
- Establishing a separate body for MSMEs.

Given the views of the banks on the informality of, especially, the micro firms, we recommend that the government develops a strategy to formalize these firms and include in the formal financial system.

Limitations

In this study, the focus is on the banks for two reasons: first, research shows that banks are the main source of external financing worldwide (Beck et al., 2010); second, banks dominate the Surinamese financial system. However, this focus gives rise to selection bias. In any follow-up study, other financial institutions – such as credit unions – should also be included. Despite their low share of the financial system in Suriname (1 percent of the system's assets), credit unions may be better equipped than other institutions to cater to the financing needs of micro firms. Furthermore, providers of informal finance such as friends and family and trade credit may be included as well, given their importance as sources of finance (see Chapter 5).

Chapter 7: Conclusions, recommendations, key contributions, and suggestions for further research

7.1 Introduction

In this chapter, we summarize the main findings of our study on obstacles to financing facing micro, small, and medium-sized firms (MSMEs) in Suriname in a small-state context. We also highlight the key contributions of this study to the literature, present recommendations based on the findings, and conclude with suggestions for further research.

Despite extensive literature on obstacles to financing, the small-state perspective on this issue is under-researched. This may lead to biases in the findings, while at the same time policy recommendations may not resonate well in a small-state context. As Suriname is one such small state, the focus on this particular context is a natural choice. Furthermore, studies on obstacles to MSME financing tend to be conducted either from the demand or from the supply side of the credit market, which may also lead to biased findings; by surveying the firms as well as the banks involved, we avoid this risk. In enterprise surveys on Suriname, micro firms are routinely excluded, while this category actually constitutes the overwhelming majority of the country's firm population; the findings and recommendations resulting from those studies might thus not be fully applicable to firms in Suriname. Finally, in studies on MSMEs, the common practice is to assume that all firms are growth oriented; however, the subcategory "survival firms" – within the category micro firms – are not growth oriented, and have a different focus entirely. This category might require other policy interventions compared with formal-sector growth-oriented firms.

The problem statement "the nature and extent of obstacles to financing in Suriname" led to the formulation of our study's main objective. In order to reach this main objective, we formulate six sub-objectives. The findings on the objective, as well as recommendations on each relevant sub-objective – specified for firms, banks, government, and the central-bank level – are presented below.

7.2 Conclusions and recommendations

Below, we present the main findings per sub-objective of the study.

Main findings on Sub-objective 1: the nature of obstacles to financing facing MSMEs in the literature, from a small-state perspective.

Based on the theoretical chapter (Chapter 2) and the chapter on small states (Chapter 3), we conclude that the primary explanations for the obstacles to financing facing MSMEs are:

- Information asymmetry

  This is compounded by weaknesses in the operating environment of small developing states, such as:

  - weak information and contractual frameworks; and
  - the existence of many MSMEs, which are characterized by informational opacity.

- High costs per unit of credit for small credit amounts.

  These costs are related to the screening and monitoring of credit contracts. This is especially true for micro and small firms.

  Given the weaknesses in the operating environment, banks – as well as firms – restore mechanisms to overcome the risks related to information asymmetry by:

  - relationship lending;
  - networking;
  - introducing partial guarantee funds; or
  - Fintech solutions (to lower the costs per unit of credit).

- The main policy recommendation from the standard literature for enhancing access to finance is to build up the informational and contractual framework in order to decrease information asymmetry and related risks so that banks can make informed credit decisions. While credit infrastructure is vital for the long-term development of the credit market, due to specific circumstances in small developing states this alone might not produce the expected spur in credit for at least three reasons. First, small developing states lack capacity – thus, enhancing the operating environment might take time. Second,

small developing states are characterized by the presence of many micro and small firms, which are inherently informationally opaque and mostly lack the type of collateral required by banks. Third, for commercial banks, high cost per unit of credit is an obstacle in lending to micro and small firms. Therefore, following the mainstream policy recommendations alone might not render the needed spur to credit growth. Government intervention in terms of providing partial guarantee schemes is essential for banks to be able to share the risks and costs, which makes it feasible for them to extend credit to micro and small firms.

- However, these findings and recommendations are only relevant for MSMEs in the formal sector. Those in the informal sector should be first incorporated into in the formal sector by means of financial inclusion before information asymmetry and cost consideration come into play, in order for banks to be able to assess credit proposals for those firms. Financial inclusion is generally defined as the availability and equality of opportunities to access financial services by individuals and businesses, including banking, loan, equity, and insurance products. Furthermore, a distinction should be made between growth-oriented and survival firms, as the second category of enterprises might use more finance from informal sources.

Main findings on Sub-objective 2: the determinants of access to external finance by SMEs in the Caribbean.

In Chapter 4, we estimated ordered probit and ordered logistic models using pooled data of six Caribbean states from the 2010 World Bank Latin American and Caribbean Enterprise Surveys (LACES) and repeated the estimation of the models using the 2014 PROductivity, TEchnology, and INnovation (PROTEqIN) survey jointly implemented by the Inter-American Development Bank (IDB), Compete for the Caribbean, and the World Bank (WB). We found that firms operating in the manufacturing sector, younger firms, women-led firms, and firms without audited financial statements experience more obstacles to financing than their respective counterparts.

Our model estimations based on the World Bank Enterprise Survey (WBES) database indicate that firms located in Belize experience a greater number of severe obstacles to

financing than those in Suriname, while Guyanese firms experience fewer severe obstacles than their Surinamese counterparts. When using the PROTEqIN database, we find that firms in Belize, Jamaica, and Trinidad and Tobago experience a greater number of severe obstacles to financing than do their equivalents located in Suriname.

Main findings on Sub-objective 3: the extent of access to external financing by MSMEs in Suriname, across firms' characteristics.

In Chapter 5, we analyzed a unique firm-level survey on Paramaribo, the Surinamese capital. We found that firms in Paramaribo predominantly use internal financial resources, commercial banks, and private capital to finance their working capital and fixed assets. Commercial banks are the most important source of external financing for firms in the country. Around 53 percent of the surveyed firms experienced access to financing as an obstacle to their current operations to some extent. Firms thought that government intervention in the following areas could have substantial to significant impact on access to financing:

- The introduction of business-support centers.
- The introduction of a credit-registry bureau.
- The introduction of a pledge registry for movable and immovable assets.
- Credit-guarantee funds.
- Reform of the collateral framework to allow for movable collateral.
- Financial education.

Main findings on Sub-objective 4: the determinants of access to external financing by MSMEs in Suriname based on a unique firm-level survey.

In Chapter 5, we assessed the determinants of obstacles to financing in Suriname based on data from a unique firm-level survey using a probit model. The probit-model estimations reveal that firms in the manufacturing, construction, and trade sectors are more likely to experience obstacles to financing than those in the services sector. They also confirm that the age of a firm, its legal status, ethnicity (Creole, Indian, Javanese, and Mixed relative to Chinese),

religion (Muslim relative to Christian), and networks are significant determinants of obstacles to financing in Paramaribo.

Main findings on Sub-objective 5: a qualitative investigation of obstacles to financing facing MSMEs in Suriname through a unique bank-level survey.

In Chapter 6, we analyzed a unique bank-level survey. The main findings are as follows:

- There is no uniformity among banks in Suriname on the subject of defining MSMEs. Credit amount and number of employees are the most commonly used criteria.
- The main reasons given by banks for their rejecting credit proposals are:
    - a lack of adequate collateral;
    - a lack of financial statements;
    - project feasibility;
    - the financial condition of the borrower;
    - a lack of MSME management capacity; and
    - the lack of a business plan.
- Banks points towards various obstacles to lending to MSMEs – viz.:
    - Macroeconomic (economy-wide) factors: high interest rates, exchange-rate risk, macroeconomic instability, and negative economic growth.
    - Regulations: domestic regulations, such as the credit-classification criteria used by the Central Bank of Suriname, anti-money laundering (AML) regulations, and reserve requirements.
    - The legal and contract-enforcement environment: collateral law (lack of movable collateral registers) and judicial efficiency (lengthy judicial processes).
    - Bank-specific factors: difficulties with appropriate information-technology tools and designing product-matching segment needs – furthermore, lack of sector analysis, bank size, and limited coverage (especially in the hinterland).
    - MSME-specific factors: the poor quality – or, in many cases, the complete absence – of financial statements and a lack of acceptable collateral are the most significant obstacles. Furthermore, the low level of managerial qualities,

an inability to manage risks, the central role of one person (especially in single-person firms), the informality encountered in MSMEs, and the difficulty in executing collateral in cases of default are also restrictive factors.

- The nature of the lending technology: risk management, high entry costs, the nature of products, difficulty in standardizing products and procedures, difficulty in attaining scale economies, and the limited payment options for clients are obstacles.
- Competition in the MSME segment: the presence of niche players and specific funds.
- A lack of adequate demand: "lack of sufficient demand" and "demand from customers that are not creditworthy" were cited as obstacles; the latter refers to firms lacking adequate acceptable collateral.

- Networks are useful in facilitating information on the availability, terms, and conditions of credit products – and, through this channel, access to finance. Only a few networks, such as relationships with accountants, affect credit decisions and credit conditions (for instance, collateral and interest rates).
- According to the banks, the government could increase the appeal of MSME lending by:
  - speeding up legal proceedings and adopting a mediation institute;
  - adopting a credit-registration bureau;
  - enhancing credit-guarantee funds;
  - offering tax incentives;
  - offering subsidies;
  - facilitating free coaching of MSMEs; and
  - enhancing access to real estate.

Sub-objective 6: to formulate policy recommendations based on the findings in the literature and those from the firm-level and the bank-level investigations.

Recommendations for firms

- Firms should improve the quality of their financial information.
- The management of firms could be strengthened.

- While the operating environment is weak, firms are encouraged to engage in networking in order to gain access to the credit market.

Recommendations for banks

- Given the weak operating environment, banks should restore relationship lending in order to cater to MSMEs. Also, networks could be explored to bridge the information gap.
- Risk management, including the capacity for credit appraisal and monitoring, should be strengthened.
- Given the importance of soft information in economies with weak information and contractual frameworks, banks could adopt hierarchical structures conducive to the utilization of such information in the lending process.
- Banks could use Fintech solutions in order to cater to MSMEs that otherwise would be underserved.

Recommendations for the government

We recommend that the Surinamese Government adopts a two-tier approach: to build up the operating environment and to provide partial guarantee funds.

1. Operating environment
    - Ensure macroeconomic stability.

      Macroeconomic instability is an important source of the obstacles to financing faced by MSMEs. Sound fiscal policies and manageable debt levels are imperative in this regard. The government should create fiscal "space" in order to support MSME financing through various policy interventions, including partial guarantee funds (see point 2, below).
    - Build up the information and contractual framework, by:
        - enhancing judicial efficiency;
        - adopting a Credit Bureau Act and instituting a credit bureau; and
        - adopting a collateral law in order to allow for movable assets to be used as collateral, as well as factoring.
    - Set up an institutional framework for Fintech companies.

A spur to growth in Fintech companies requires appropriate rules and regulations, which should aim at protecting consumers at the same time.

- Establish a program on financial education.
  The need for financial education has resonated clearly throughout the surveys. We recommend that the government conducts a baseline study to find out the particular needs of the various market segments, and designs a national financial-education policy accordingly. Special attention should be paid to those enterprises facing a relatively larger number of obstacles, such as Chinese and women-led firms.
- Instigate government support centers for MSMEs.
  Government support centers could be set up in close collaboration with the business associations, to reflect the needs of firms. In this case, special attention should also be paid to those firms experiencing a relatively larger number of obstacles to financing.
- Financial inclusion.

  Given that the overwhelming majority of the firm population in Suriname falls into the categories “micro” and “small,” including survival firms, we recommend that the government adopts a national financial-inclusion program. The first step in this regard could be a study on the extent of informality and underlying motives to operate in the informal sector. So long as these firms are not channeled into the formal sector, no amount of building information and contractual frameworks to reduce information asymmetry will yield the expected results. Information asymmetry and its associated risks can only be addressed when firms are able to submit credit proposals to financial institutions, such as banks.

- Develop the legal infrastructure to stimulate alternative MSME financing.
  Factoring and leasing are two propagated instruments in a weak operating environment (AFI, 2019). Leasing of machinery and equipment is a complementary source of investment finance; it focuses on a firms’ cash-flow-generating capacity instead of on its credit history or its capacity to pledge collateral. Factoring involves the selling of creditworthy account receivables at a

discount rate to specialized institutions in order to receive immediate funds; it represents an alternative source of working capital.

2. Partial guarantee funds

   We recommend that the government adopts an explicit policy of enhancing access to financing for MSMEs, with partial guarantee funds as an integral instrument in this approach. We further suggest that the government leaves credit appraisal and monitoring to the commercial banks.

Recommendations for the central bank

1. When designing monetary and supervisory policies, strike an appropriate balance between those policies on the one hand and access to finance on the other. In line with Claessens (2006), we suggest considering national welfare in supervisory policies.
2. Establish a system of financial education, in collaboration with the government.
3. Enhance credit-market infrastructure, in collaboration with the government.
4. Set up a database for credit proposals rejected by banks.
5. Adopt a consistent definition for MSMEs and, for policy purposes, demand data from banks for each segment.
6. Assess credit-market conditions regularly, from the demand as well as the supply side of the market.

7.3 Key contributions to the literature

Our study makes a number of key contributions to the literature on small developing states about obstacles to financing faced by MSMEs. First, it is the first systematic study on such obstacles in Suriname to be primarily conducted from a small-state perspective. Second, the demand as well as the supply side of the credit market have been surveyed in order to prevent biased findings. Third, determinants overlooked or under-researched in the existing literature have been tested in the context of a small state: ethnicity, religion, and networks. Finally, the study has established that a firm's age and its participation in networks seem to have non-linear relationships with obstacles to financing, which intensify with increasing age and networking until a certain point and decrease thereafter.

Our findings have implications for the empirical literature on determinants of obstacles to financing and for policies aimed at enhancing access to finance. Our results suggest the inclusion of ethnicity and religion as determinants of such obstacles in studies focusing on multi-ethnicity and multi-religious societies – and the same applies to the issue of networks.

Furthermore, our findings suggest that the main policy recommendation for enhancing access to financing for MSMEs will not yield the expected results in terms of a spur in credit growth and an impact on production and poverty alleviation. Government intervention, except for that undertaken to enhance the operating environment, should entail the provision of partial guarantee funds in order to provide commercial banks with the required level of risk comfort to embark on large-scale MSME financing. Given the prevalence of micro firms, especially in small developing states, governments should attempt to formalize these firms before they are permitted to use banking products.

7.4 Suggestions for further research

Our study has several limitations, which should be taken into account when interpreting the results. Furthermore, these limitations suggest a need for further research regarding the determinants of obstacles to MSME financing in the Caribbean as well as in Suriname. We summarize the limitations per empirical chapter next.

Limitations: Chapter 4

The WBES and PROTEqIN databases referred to in Chapter 4 have several limitations.

First, the WBES as well as the PROTEqIN database excludes micro firms, while this category of firms constitutes a large part of the firms' population in the Caribbean. Furthermore, in the category micro firms, a distinction has to be made between profit-oriented and "survival" firms, as pointed out by Berner et al. (2008), as both categories of firms have different motives, which in turn have implications for any policy design aimed at improving access to finance. Second, the agriculture sector is excluded, while this sector might experience specific obstacles to financing, in addition to those of the other sectors. Third, ethnicity, religion, and networks are not included in the surveys, while these are potential determinants of obstacles to firms' financing (see also Chapter 5) – especially in a small-state context. Fourth, the surveys were mainly executed in the capital cities of the countries, whereas the results for particular sectors, for instance, might differ from district to district and the narrow focus might induce a bias in the surveys. The findings of the surveys are thus not likely to be representative of the whole country in each case.

Limitations: Chapter 5

The survey used in Chapter 5 has various limitations.

First, the survey is conducted in Paramaribo, the capital city of Suriname, which is the center of the country's economic activities. However, limiting focus to Paramaribo potentially induces biases. The sectoral and ethnic composition of Paramaribo differs from the other

districts of Suriname, and the country's agriculture and mining sectors are automatically excluded from the survey. We suggest conducting a similar study for the total firm population of Suriname. Specific sectors that are not present in Paramaribo – mining and agriculture among them – could be included. In the hinterland of Suriname especially, we expect major difficulties in accessing finance as banks are often absent in such sparsely populated areas due to a lack of economic feasibility. More importantly, in the hinterland, land rights are collectively owned, further complicating the use of land as collateral due to the low tradability of these lands. As real estate is the prime source of collateral for banks, access to finance could be challenging in the hinterland. Furthermore, the districts outside of Paramaribo vary in terms of ethnicity and sector. For instance, the western district of Nickerie is dominated by the cultivation of rice by East Indians, whereas the country's hinterland is focused on the mining of gold by the Maroon ethnic group.

Second, given significant share of micro firms in the firm population, we suggest a separate study on micro firms, in which explicitly a distinction is explicitly made between growth-oriented and survival firms, in line with Berner et al. (2008). Also, firms without a fixed location where they carry out their economic activities should be included.

Third, we suggest a study to explore in greater depth the channels through which ethnicity and religion influence obstacles to financing. In the current study, our focus was on assessing whether these factors were significant determinants and providing possible causes. A follow-up study could explore whether certain ethnic and religious groups facing more obstacles to financing do so because of discrimination or a lack of resources (that is, assets that could be used as collateral, initial levels of wealth, and network resources).

Fourth, we suggest using volume of sales, instead of numbers of workers, to classify firms into micro, small, and medium-sized categories. In our study, firms did not provide sufficient information to allow us to use this criterion to classify them.

Fifth, we suggest measuring years of schooling on a continuous scale rather than classified into different ordered categories (see, for example, Ogubazghi & Muturi, 2014).

Limitations: Chapter 6

In the study referred to in Chapter 6, the focus is on the banks for two reasons: first, research shows that banks are the main source of external financing worldwide (Beck et al., 2010); second, banks dominate the Surinamese financial system. However, this focus gives rise to selection bias. In any follow-up study, other financial institutions – such as credit unions – should also be included. Despite their low share of the financial system in Suriname (1 percent of the system's assets), credit unions may be better equipped than other institutions to cater to the financing needs of micro firms. Furthermore, providers of informal finance such as friends and family and trade credit may be included as well, given their importance as sources of finance (see also Chapter 5).

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Annex 2.1: Merchandise Exports 2015–2019 (as percent of total merchandise exports)

	2015	2016	2017	2018	2019	Av. 2015-2019
Exports	**100**	**100**	**100**	**100**	**100**	**100**
Mining	**79**	**83**	**88**	**86**	**86**	**84**
Gold	55	72	79	77	78	72
Alumina	14	0	-	-	-	3
Oil	9	10	9	10	8	9
Non-mining	**21**	**17**	**12**	**14**	**14**	**16**
Vegetables, fruits, and the like	5	5	3	3	2	3
Animals and animal products	3	3	2	2	2	2
Foodstuff	3	2	2	2	3	2
Wood and wood products	2	3	3	3	3	3
Other	9	5	3	3	4	5

Source: Central Bank of Suriname.

Annex 2.2: Suriname Credit Rating Overview

Date	**Rating agency**		
	S&P	Moody's	Fitch
2015	BB-/stable	Ba3/stable	BB-/stable
2016	B+/negative	B1/stable	B+/negative
2017	B/negative		B-/negative
2018	B/stable	B2/negative	B-/stable
2019	B+/stable	B2/stable	B-/stable
2020–Jul.	CCC/stable	Caa3/negative	CC

Source: Central Bank of Suriname.

Annex 3.1: World Bank list of small states (50 states in total)

Africa	East Asia Pacific	Caribbean	Middle East and North Africa	Europe and Central Asia	South Asia
Botswana	Brunei Darussalam	Antigua and Barbuda	Bahrain	Cyprus	Bhutan
Cabo Verde	Fiji	The Bahamas	Djibouti	Estonia	Maldives
Comoros	Kiribati	Barbados	Qatar	Iceland	
Equatorial Guinea	Marshall Islands	Belize		Malta	
Gabon	Federated States of Micronesia	Dominica		Montenegro	
The Gambia	Nauru	Grenada		San Marino	
Guinea-Bissau	Palau	Guyana			
Lesotho	Samoa	Jamaica			
Mauritius	Solomon Islands	St. Kitts and Nevis			
Namibia	Timor-Leste	St. Lucia			
São Tomé and Príncipe	Tonga	St. Vincent and the Grenadines			
Seychelles	Tuvalu	Suriname			
Swaziland	Vanuatu	Trinidad and Tobago			

Source: World Bank (2018).

Annex 3.2: IMF list of small and micro developing states (34 states)[1]

Caribbean (12)			
Country	**Micro States**	**Island State**	**Income Group[2]**
Antigua and Barbuda	Y	Y	High
Bahamas, The		Y	High
Barbados		Y	High
Belize			UM
Dominica	Y	Y	UM
Grenada	Y	Y	UM
Guyana			UM
St. Kitts and Nevis	Y	Y	High
St. Lucia	Y	Y	UM
St. Vincent and the Grenadines	Y	Y	UM
Suriname			UM
Trinidad and Tobago		Y	High
Asia-Pacific (14)			
Country	**Micro States**	**Island State**	**Income Group**
Bhutan			LM
Fiji		Y	UM
Kiribati	Y	Y	LM
Maldives		y	UM
Marshall Islands, Rep.	Y	Y	UM
Micronesia	Y	Y	LM
Nauru	Y	Y	High
Palau	Y	Y	UM
Samoa	Y	Y	LM
Solomon Islands		Y	LM
Timor-Leste			LM
Tonga	Y	Y	LM
Tuvalu	Y	Y	UM
Vanuatu		Y	LM
Other Regions (8)			
Country	**Micro States**	**Island State**	**Income Group**
Cabo Verde		Y	LM
Comoros		Y	Low
Djibouti			LM
Mauritius		Y	UM
Montenegro			UM
São Tomé and Príncipe	Y	Y	LM
Seychelles	Y	Y	HIGH
Swaziland			LM

Source: IMF (2017, p. 38).

Note:

1) Small States are defined as developing countries that are Fund members with populations below 1.5 million while micros states are a sub-group with populations below 200,000 as of 2011.

2) High-income countries (High) had per capita annual incomes of $12,476 or more in 2015; upper middle-income countries (UM) had income levels of between $4,036 and $12,475; lower middle-income countries (LM) had income levels between $1,026 and $ 4,035; low-income countries (Low) had income levels of $1,025 or less, based on the World Bank Atlas method.

Annex 4.1: Descriptive statistics in selected small developing Caribbean states using World Bank database

(Upper row: number of observations; lower row: percentage)

Obstacle	Suriname	Trinidad	Jamaica	Barbados	Belize	Guyana	Total
No Obstacle	16	70	88	38	10	58	280
	6	25	31	14	4	21	100
Minor Obstacle	41	83	76	25	19	40	284
	14	29	27	9	7	15	100
Moderate Obstacle	40	107	95	27	25	34	323
	12	33	28	8	8	11	100
Major Obstacle	38	78	84	40	64	22	323
	12	24	26	12	20	8	100
Severe Obstacle	17	32	33	20	32	11	145
	12	22	23	14	22	8	100
Total	152	370	376	150	150	165	1363
	11	27	28	11	11	12	100
Sector							
Manufacturing	74	121	121	76	76	78	546
	14	22	22	14	14	14	100
Services	78	249	255	74	74	87	817
	10	30	31	9	9	11	100
Total	152	370	376	150	150	165	1363
	11	27	28	11	11	12	100
Size							
Small	56	131	139	51	76	55	508
	11	26	27	10	15	11	100
Medium	96	129	167	62	57	69	580
	17	22	29	11	10	12	100
Large	0	110	70	37	17	41	275
	0	40	25	13	6	15	100
Total	152	370	376	150	150	165	1363

	11	27	28	11	11	12	100
Legal Status							
Shareholding Company	52	152	68	53	47	60	432
	12	35	16	12	11	14	100
Non-shareholding Company	100	218	308	97	103	105	931
	11	23	33	10	11	11	100
Total	152	370	376	150	150	165	1363
	11	27	28	11	11	12	100
Gender							
Female	22	56	71	27	28	29	233
	9	24	31	12	12	12	100
Male	130	314	305	123	122	136	1130
	12	28	27	11	11	12	100
Total	152	370	376	150	150	165	1363
	11	27	27	11	11	12	100
Finstat							
Yes	73	66	86	26	47	14	312
	23	21	28	8	15	5	100
No	79	304	290	124	103	151	1051
	7	29	28	12	10	14	100
Total	152	370	376	150	150	165	1363
	11	27	28	11	11	12	100

Source: Author's computation based on World Bank Enterprise Survey database.

Annex 4.2: Descriptive statistics in selected small developing Caribbean states using PROTEqIN database (upper row: number of observations; lower row: percentage)

Obstacle	Suriname	Trinidad	Jamaica	Barbados	Belize	Guyana	Total
No Obstacle	38	12	45	33	8	40	176
	21	7	25	19	5	23	100
Minor Obstacle	39	104	62	27	21	15	268
	14	39	23	10	8	6	100
Moderate Obstacle	14	178	61	23	22	22	320
	4	56	19	7	7	7	100
Major Obstacle	22	34	56	28	49	26	215
	10	16	26	13	23	12	100
Severe Obstacle	7	12	18	12	22	17	88
	8	14	20	14	25	19	100
Total	120	340	242	123	122	120	1067
	11	32	23	12	11	11	100
Sector							
Manufacturing	66	116	95	54	57	43	431
	15	27	22	13	13	10	100
Services	54	224	147	69	65	77	636
	9	35	23	11	10	12	100
Total	120	340	242	123	122	120	1,067
	11	32	23	12	11	11	100
Size							
Small	43	114	86	41	66	69	419
	10	27	21	10	16	16	100
Medium	63	128	109	48	48	31	427
	15	30	26	11	11	7	100
Large	14	98	47	34	8	20	221
	6	45	21	15	4	9	100
Total	120	340	242	123	122	120	1067
	11	32	23	12	11	11	100

Legal Status							
Shareholding Company	61	150	45	44	39	46	385
	16	39	12	11	10	12	100
Non-shareholding Company	59	190	197	79	83	74	682
	9	28	29	11	12	11	100
Total	120	340	242	123	122	120	1067
	11	32	23	12	11	11	100
Gender							
Mostly women	13	42	48	20	17	19	159
	8	26	30	13	11	12	100
Mostly men	88	263	133	73	65	77	699
	13	38	19	10	9	11	100
Equally Men–Women	19	35	61	30	40	24	209
	9	17	29	14	19	12	100
Total	120	340	242	123	122	120	1067
	11	32	23	12	11	11	100
Education level							
Low	41	36	32	17	17	42	185
	22	20	17	9	9	23	100
Middle	58	55	156	72	82	37	460
	13	12	34	15	18	8	100
High	21	249	54	34	23	41	422
	5	59	13	8	5	10	100
Total	120	340	242	123	122	120	1067
	11	32	23	12	11	11	100
Finstat							
Yes	88	286	173	101	83	82	813
	11	35	21	13	10	10	100
No	32	54	69	22	39	38	254
	13	21	27	9	15	15	100
Total	120	340	242	123	122	120	1067
	11	32	23	11	11	11	100

Source: Author's computation based on PROTEqIN survey database.

Annex 4.3: Data imputation

Variable	Imputation method	World Bank database	PROTEqIN database
Obstacle	Correlation matrix	Obstacle and Size had a strong, statistically significant correlation.	Obstacle and Fin stat had a strong, statistically significant correlation.
Gender	Correlation matrix	Gender and Legal stat showed a strong, statistically significant correlation.	
Legal stat	Correlation matrix	Legal stat and Obstacle showed a strong, statistically significant correlation.	Legal stat and Fin Stat showed a strong, statistically significant correlation.
Financial stat	Correlation matrix	Fin Stat and Legal stat showed a strong, statistically significant correlation.	
Education level	Correlation matrix		Education level and Legal stat showed a strong, statistically significant correlation.

Missing data of Age and Age squared have been imputed based on a regression analysis for the World Bank database as well as the PROTEqIN database.

When using the World Bank database, the regression has the following structure:

$$Age\ or\ Age_{sq} = Obstacle + sector + size + gender + leg_{stat} + Fins_{stat}$$

When using the PROTEqIN database, the regression has the following structure:

$$Age\ or\ AGE_{sq} = Obstacle + sector + size + gender + leg_{stat} + Fins_{stat} + Education$$

Annex 4.4: Regression results based on World Bank database

Independent Variables	(1) Oprobit	(2) Ologit
Sector	-0.278***	-0.464**
	(0.091)	(0.153)
Size (*Ref = Small*)		
Medium	0.097	0.149
	(0.070)	(0.118)
Large	-0.167	-0.301
	(0.145)	(0.251)
Age	-0.010***	-0.022**
	(0.003)	(0.007)
Age_sq	0.000*	0.000
	(0.000)	(0.000)
Fin_stat	0.035	0.105
	(0.070)	(0.120)
Gender	0.225***	0.351**
	(0.070)	(0.118)
Legal_status	-0.013	0.011
	(0.065)	(0.110)
***Country** (Ref = Suriname)*		
Trinidad & Tobago	0.026	0.031
	(0.206)	(0.344)

Jamaica	0.276	0.479
	(0.210)	(0.350)
Barbados	-0.177	-0.284
	(0.200)	(0.337)
Belize	0.572***	1.014**
	(0.219)	(0.367)
Guyana	-0.506**	-0.877*
	(0.255)	(0.426)
Observations	1,067	1,067

Source: Author's computation using the World Bank database.

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

Annex 4.5: Regression results based on PROTEqIN database

Independent Variables	(1) Oprobit	(2) Ologit
Sector	-0.131	-0.236
	(0.087)	(0.151)
Size (*Ref = Small*)		
Medium	-0.137*	-0.252**
	(0.075)	(0.128)
Large	-0.070	-0.113
	(0.141)	(0.245)
Age	-0.006*	-0.025***
	(0.003)	(0.009)
Age_sq	0.000	0.000**
	(0.000)	(0.000)
Fin_stat	-0.284***	-0.444***
	(0.080)	(0.141)
Gender *(Ref = Equally Female and Male)*		
Mostly Women	0.015	0.059
	(0.090)	(0.158)
Mostly Men	-0.135	-0.260
	(0.117)	(0.204)

Edu *(Ref = Low)*		
Middle	-0.043	-0.041
	(0.104)	(0.182)
High	-0.295***	-0.403**
	(0.105)	(0.182)
Legal_status	0.028	0.058
	(0.075)	(0.130)
Country *(Ref= Suriname)*		
Trinidad & Tobago	0.622***	1.157***
	(0.217)	(0.386)
Jamaica	0.525**	1.132***
	(0.217)	(0.388)
Barbados	0.306	0.743*
	(0.224)	(0.405)
Belize	1.199***	2.372***
	(0.246)	(0.441)
Guyana	0.151	0.439
	(0.269)	(0.497)
Observations	1,067	1,067

Source: Author's computation using the PROTEqIN database.

Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

Annex 5.1: Survey on Obstacles to Financing facing Firms in Paramaribo 2016

SURVEY ON OBSTACLES TO FINANCING FACING FIRMS IN PARAMARIBO 2016

READ THE FOLLOWING TO THE RESPONDENT BEFORE STARTING THE INTERVIEW.

This survey is aimed at collecting information on the opinions and experiences of firms on access to finance, and is part of the field study of Ph.D. candidate Drs. William Orie, MPA at the Institute of Social Studies, the Hague/Erasmus University. Prof. Dr. S. M. Murshed and Dr. E. Papyrakis are the promoter and co-promoter, respectively.

The survey will enable the researcher to provide recommendations to firms as well as institutions, i.e. the Central Bank of Suriname, the government, and financial institutions, aimed at enhancing access to finance for firms.

The information obtained here will be held in the strictest confidence. Neither your name nor the name of your business will be used in any document based on this survey. Individual firm data will not be shared with anyone – including the tax authorities.

QUESTIONNAIRE

A.1)

Date	Time	
Date		
Time		
District		
Sector Code		
Questionnaire ID		
	Yes	No
Supervisor callback		

SECTOR	
Manufacturing	1
Construction	2
Trade	3
Services	4

Firm's name:				
Address:				
Phone number:			**Male**	**Female**
Respondent	Name:	Gender		
	Position:			
	Phone number:	Mobile number:		
	Email (business and personal):			
Interviewer:			**Code:**	
Supervisor:			**Code:**	

Number of employees/workers	End 2015	Nov. 2016
Full-time employees (more than 20 hours per week)		
Part-time employees (less than 20 hours per week)		
Number of unpaid owners/family members involved in the firm		

Labor, capital, and technology intensity	SRD	Don't know
What was the total annual cost of labor including wages, salaries, bonuses, and social-security payments in 2015?		
What is the estimated value of the following assets of the firm in their current condition?		
Machinery, vehicles, and equipment		
Land and buildings		
How much computer equipment (including laptops) does the firm have?		

	Yes	No	
A.2) Is this firm part of a larger firm, such as a subsidiary or branch?			If No, go to **B.1**
If Yes,			
How many firms are part of this firm-group?			
What type of firm is this? (See Table A.2, below)			
	Yes	**No**	
Are this firm's financial statements (balance sheet, income statement) being prepared?			
Are the financial statements checked and certified by an external auditor?			

A.2) Type of firm	
Headquarters (HQ) with no production/no sales at this location	1
Headquarters with production and/or sales at this location	2
Firm physically separated from HQ and other firms of the same firm group	3
Firm physically separated from HQ but linked with other firms of the same firm group	4

B.1) What is this firm's current legal status? (See Table B.1, below)		
	Yes	**No**
Is its legal status inherited?		

B.1) Firm's current legal status	
Shareholding company with shares traded in the stock market (NV)	1
Shareholding company with non-traded shares or shares traded privately (NV)	2
Sole proprietorship	3
Partnership	4
Limited partnership	5
Foundation	6
Union/association	7
Other (please specify)	8

B.2) Is this a family firm?	Yes	No
This is a firm whose majority shares (50% or more) or the majority stake is owned by the controlling family, including the founder(s) who plan to hand over the business to their offspring		

B.3) What percentage of this firm is owned by each of the following:	
Private domestic individuals, companies, or organizations	%
Private foreign individuals, companies, or organizations	%
Government	%
Other	%
TOTAL	**100%**

B.4) How would you characterize the gender composition of the owners/shareholders of this firm? (See Table B.4a)			If 1, skip to B.5
If not equal to 1:	**Yes**	**No**	
Is the largest owner/shareholder female?			If No, go to B.5
With regard to the largest female owner/shareholder:	**Yes**	**No**	
Is she related to any of the other owners of this firm?			
What percentage of the firm does she own?	%		
To what extent is she involved in the management of this firm? (See Table B.4b)			
How many years of experience does she have working in this firm?			
How many years of experience does she have working in another firm?			

B.4a) Gender composition	
All men	1
Predominantly men	2
Equally men and women	3
Predominantly women	4
All women	5
B.4b) Extent	
Takes major strategic and financial decisions	1
Takes decisions in consultation with others	2
Delegates decisions to other partners	3

B.5) How would you characterize the gender composition of the management group of this firm? (See Table B.5)		
	Male	**Female**
What is the gender of the director?		
What is the gender of the person responsible for dealing with banks/financial institutions?		

B.5) Gender composition	
All men	1
Predominantly men	2
Equally men and women	3
Predominantly women	4
All women	5

B.6) In which year did this firm start operations?			
	Yes	**No**	
Does this firm have an internationally recognized quality certification?			
Is this firm formally registered at the Chamber of Commerce?			If No, skip to **B.8**
If Yes, in which year was this firm formally registered?			

B.7) Work experience	
How many years of working experience in this sector does the director have?	

B.8) Level of Education	
What is the level of education of the owner/largest shareholder? (see Table B.8)	
What is the level of education of the director? (see Table B.8)	

B.8) Level of education	
Did not complete primary school	1
Completed primary school	2
Started but did not complete secondary school	3
Completed secondary school	4
Started but did not complete college/vocational training	5
Completed college/vocational training	6
Did not complete university	7
University Graduate	8
Post-graduate (Masters, Ph.D.)	9
Other (please specify)	10

B.9) Sales and profit	**2015** (SRD)	**2014** (SRD)	**Don't know**
What were the total gross sales of your firm in:			
What was the gross profit of your firm in:			

B.10) Ethnic group	
To which ethnic group does the owner/largest shareholder belong? (See Table B.10)	
To which ethnic group does the director belong? (See Table B.10)	

B.10) Ethnic groups of Suriname	
Chinese	1
Creole	2
Indian	3
Amer-Indian	4
Javanese	5
Maroon*	6
Mixed	7
Other	8

* In the absence of a new official name, we work with the existing one.

B.11) Religion	
What is the religion of the owner/largest shareholder? (See Table B.11)	
What is the religion of the director? (See Table B.11)	

B.11) Religions in Suriname		
Christianity	1	
Hinduism	2	
Islam	3	
Other	4	Which?
None	5	

B.12) Market What percentage of this firm's sales are:	
National sales	%
Exports	%
Total	100%

B.13) Status of land Of the land occupied by this firm, what percentage does it:	
Own	%
Rent/lease	%
Other (specify)	%
Total	100%

C.1a) Financing sources of working capital

Working capital relates to the financing of short-term production activities, such as buying inputs, supplies and paying salaries (in short, financing all aspects of the business except for investments in fixed assets).

Enter below for each source of funding how important it was for financing working capital in the past three years. Where 1 is Not Important at All, and 5 is Very Important	1	2	3	4	5
Internal funds/retained earnings					
Private commercial banks (Surinaamsche Bank, Hakrinbank, Republic Bank, Finabank, Surichange Bank, GODO)					
State-owned banks and/or government agencies (SPSB, VCB/LBB, NOB)					
Non-bank financial institutions (such as credit unions)					
Purchases on credit from suppliers and advances from					
Family/friends in Suriname					
Family/friends living abroad					
Informal sources (e.g. moneylenders)					
Angel investors: individual investors providing capital and/or knowledge to young innovative companies					
Venture capitalists: funding provided by companies or funds to small startups with high growth potential					
Private equity					
Credit cards					
Subsidized loans by the government					
Factoring: selling of invoices to a factoring company for less cash than the face value of					
Other (specify)					

C.1b) Financing sources of fixed assets Fixed assets include the purchase of machinery, vehicles, equipment, land, or buildings					
Enter below for each source of funding how important it was for financing fixed assets in the past three years. Where 1 is Not Important at All, and 5 is Very Important	1	2	3	4	5
Internal funds/retained earnings					
Private commercial banks (Surinaamsche Bank, Hakrinbank, Republic Bank, Finabank,					
State-owned banks and/or government agencies (SPSB,					
Non-bank financial institutions (such as credit unions)					
Purchases on credit from suppliers and advances from					
Family/friends in Suriname					
Family/friends living abroad					
Informal sources (e.g. moneylenders)					
Angel investors: individual investors providing capital and/or knowledge to young innovative companies					
Venture capitalists: funding provided by companies or funds to small startups with high growth potential					
Private equity					
Credit cards					
Government-provided or -subsidized entity or program					
Issued new equity (shares)					
Issued new debt (including commercial papers and debentures)					
Lease: obtaining the right to use fixed assets (e.g. cars or equipment) in return for periodic payments, but without the direct ownership of the assets.					
Factoring: selling of invoices to a factoring company for less cash than the face value of the invoice. This company receives your claim and must collect it.					
Other (specify)					

C.2) Does this firm currently have a bank account?	Yes	No	
Does this firm currently have a bank loan, line of credit, or current account? The difference between a bank loan and a credit line is that the exact loan amount and the repayment dates are usually set in the case of a bank loan, but in the case of a credit line the borrower can take up only part of the money at an agreed maximum and interest is calculated only on the actual amount withdrawn. A current- account credit is a negative balance of a bank account with or without specific penalties.			If No, skip to **C.3**
If Yes, for the most recent bank loan, line of credit, or current-account credit that is still current:			
Is it a bank loan (1), line of credit (2), or current-account credit (3)?			
In which year was it approved?			
What amount in SRD,USD or Euro was approval?			
What is the average annual interest rate?	%SRD, %US$, %euro		
What is the total duration (term) in months?			
What type of financial institution granted the bank loan, line of credit, or current account credit? (See Table C.2 below)			
	Yes	**No**	
Did your financial institution require collateral?			If No, skip to **C.3**
If Yes, which of the following assets were required as collateral:			
Land, buildings			
Machinery and equipment, including movables			
Accounts receivable and inventories			
Personal assets of owner (house, etc.)			
Other (specify)			
If Yes, what was the approximate value of the collateral in SRD, USD, or Euro?			

C.2) Type of financial institution	
Private commercial banks	1
State-owned banks (VCB/LBB, SPSB, NOB) and/or government agencies	2
Non-bank financial institutions (microfinance institution, credit cooperative, credit union, finance company)	3
Other	4

C.3) In the last three years, did this firm apply for a bank loan, line of credit or current-account credit?	Yes	No	
			If No, skip to **C.4**
If Yes:			
How many applications were submitted?			
How many of those applications were rejected?		If 0, skip to C5	
What were the three most common reasons given **by the lender** for those rejections? (See Table C.3)? Fill in the first cell adjacent for the most important, followed by the second, and then the third main reason.			

C.3) Reason cited by lender	
Collateral or co-signers unacceptable	1
Project has insufficient profitability	2
Problems with credit history/report	3
Incompleteness of loan application	4
Concerns about level of debt already incurred	5
Other objections	6

C.4) If your firm did not apply for a line of credit or a loan, what was the main reason? (See Table C.4 below). Fill in the first cell adjacent for the most important, followed by the second, and then the third main reason.			

C.4) Main reasons	
No need for a loan – firm has sufficient capital	1
Cultural and religious reasons	2
Application procedures for loan or line of credit are complex	3
Interest rates are not favorable	4
Collateral requirements for loan or line of credit are too high	5
Size of loan and maturity are not favorable	6
Did not think it would be approved	7
Other (specify)	8

C.5) Is access to finance, which includes availability and cost, interest rates, fees and collateral requirements, No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle to the current operations of this firm?					
	No Obstacle	Minor Obstacle	Moderate Obstacle	Major Obstacle	Very Severe Obstacle
Access to finance	1	2	3	4	5

C.6) Please indicate to what extent the following specific factors are perceived or experienced as obstacles in accessing the credit market.					
Specific factors	No Obstacle (1)	Minor Obstacle (2)	Moderate Obstacle (3)	Major Obstacle (4)	Very Severe Obstacle (5)
Availability and type of credit					
Interest rate					
Requirements for collateral (value and type)					
Transaction costs (all other costs except for the interest rate)					
Lack of appropriate land title					
Difficulty in preparing business plan					

D.1) Networks

Now we continue with some questions about the networks of the firm – grouped into general, managerial, and social networks.

General Networks	Yes (1)	No (0)
1. Is the firm a member of any profession/trade association(s)? Examples of profession associations (individuals are members): bar association, accounts association, dentist associations. Examples of trade associations (companies as members): Algemene Aannemers Vereniging (AAV), Associatie van Kleine en Middelgrote Ondernemingen in Suriname (AKMOS), Associatie van Surinaamse Fabrikanten (ASFA), Vereniging van Surinaams Bedrijfsleven (VSB), Vereniging van Winkeliers (VVW).		
2. Does the firm attends trade fairs and business seminars?		
3. Does the firm have relationships with government agencies? A firm could be a supplier or subcontractor on different projects financed by the government.		
4. Does the firm have relationships with accountants? E.g. engagement of accountants on part-time basis and/or outsourcing of accounting services.		
5. Does the firm have relationships with external accountants? E.g. contracting of external accountant to audit financial statement; or there might be places/forums in which your firm can network with accountants.		
Managerial networks		
1. Does the firm have relationships with competitors (meetings of managers of similar firms)		
2. Does the firm have relationship with suppliers? Firm's relationships with key manufacturers and/or distributors (importers).		
3. Does the firm have relationship with firms other than competitors and suppliers?		
4. Does the firm have relationship with costumers? (E.g. organizing special events such as vacation and multi-cultural activities for costumers, discounts, presents).		
Social networks		
1. Is the director/owner a member of any social associations/clubs (e.g. religious, cultural, ethnic, community, sports) that led to information about credit products/loan-application processes or that affected credit conditions or credit decisions?		
2. Does the director/owner have relationships with friends that led to information about credit products/loan-application processes or that affected credit conditions or credit decisions?		
3. Does the director/owner have relationships with families and relatives that led to information about credit products/loan-application process or that affected credit conditions or credit decisions?		

D.2) Impact of network on access to finance

Have any of the networks facilitated:				
	Information on the availability of credit products, the drafting of credit proposals, credit-application processes, or credit conditions?		Credit decisions or credit conditions (such as collateral and interest rate) by the credit provider?	
	Yes (1)	No (0)	Yes (1)	No (0)
1. General networks				
2. Managerial networks				
3. Social networks				

E.1) Measures to improve access to financing for firms

Please indicate what impact the following measures could have on improving access to finance for firms:	None (1)	Little (2)	Some (3)	Substantial (4)	Enormous (5)
1. Introduction of business-support centers (e.g. for assisting with the preparation of business plans, accounting, financial management, and financing proposals)					
2. Introduction of credit-registry bureau (lenders can quickly oversee credit history, based on which they could take an informed decision)					
3. Introduction of pledge registry for movable and immovable assets (lenders could quickly obtain information on whether the collateral that a company wants to use for a current loan has already been pledged or not)					
4. Credit-guarantee funds (part of the credit risk is covered by a credit-guarantee fund, which could lead to lower interest rates for firms)					
5. Reform of the collateral framework to allow for movable collateral (allow immovable as well as movable assets as collateral)					
6. Financial education					
7. Other measures (please specify)					

Respondent comments/recommendations

Interviewer comments

***** Thank you very much*****

Annex 5.2: Population of Suriname by district and gender

District	Number			Percentages		
	Male	Female	Total	Male	Female	Total
Paramaribo	119,439	121,485	240,924	44	45	44
Wanica	57,776	60,446	118,222	21	22	22
Sipaliwini	18,226	18,839	37,065	7	7	7
Nickerie	17,653	16,580	34,233	7	6	6
Commewijne	16,342	15,078	31,420	6	6	6
Para	12,589	12,111	24,700	5	4	5
Marowijne	9,049	9,245	18,294	3	3	3
Saramacca	9,307	8,173	17,480	3	3	3
Brokopondo	8,501	7,408	15,909	3	3	3
Coronie	1,747	1,644	3,391	1	1	1
Total	**270,629**	**271,009**	**541,638**	**100**	**100**	**100**

Source: General Bureau of Statistics (2013).

Annex 5.3: Population of Paramaribo by ethnicity

Ethnicity		
	Number	Percentage (rounded)
Chinese	5,018	2
Creole	61,477	26
Indian	55,192	23
Javanese	23,670	10
Mixed	44,077	18
Maroon+Other	51,490	21
Total	**240,924**	**100**

Source: General Bureau of Statistics (2014).

Annex 5.4: Population of Paramaribo by religion

Religion		
	Number	Percent (rounded)
Christianity	141,197	59
Hinduism	42,356	18
Islam	25,292	10
Other	6,636	3
None	25,443	11
Total	**240,924**	**100**

Source: General Bureau of Statistics (2014).

Annex 5.5a: Ethnicity by religion (row totals)

	Religion (Weighted row percentages)					
Ethnicity	Christianity	Hinduism	Islam	Other	None	Total
Chinese	43	0	0	2	55	100
Creole	66	0	0	12	22	100
Indian	14	64	20	0	2	100
Javanese	17	0	56	2	25	100
Mixed	62	8	1	13	15	100
Maroon+Other	66	0	3	26	5	100

Source: Author's calculations.

Annex 5.5b: Ethnicity by religion (column totals)

	Religion (Weighted column percentages)				
Ethnicity	Christianity	Hinduism	Islam	Other	None
Chinese	31	0	0	9	71
Creole	23	0	0	25	13
Indian	8	91	76	0	2
Javanese	1	0	17	1	2
Mixed	27	9	3	38	11
Maroon+Other	10	0	4	27	1
Total	100	100	100	100	100

Source: Author's calculations.

Annex 5.6: Correlation matrix of coefficients of the probit model

	Manufacturing	Construction	Trade	Small	Meduim	Age	Age_sq	Legal Stat	Equally Men-Women	Women	Creole	Indian	Javanese	Mixed	Maroon+Other	Hinduism	Islam	Other	None	Middle	High	Financial Stat	Network	Network_sq
Manufacturing	1.00																							
Construction	0.52	1.00																						
Trade	0.55	0.59	1.00																					
Small	0.11	0.10	0.14	1.00																				
Meduim	0.21	0.19	0.25	0.61	1.00																			
Age	-0.07	-0.11	-0.21	-0.26	-0.21	1.00																		
Age_sq	0.05	0.07	0.14	0.21	0.12	-0.95	1.00																	
Legal Stat	-0.05	-0.03	-0.11	0.06	-0.09	-0.01	0.04	1.00																
Equally Men-Women	0.09	0.08	0.05	-0.03	-0.01	-0.09	0.08	-0.11	1.00															
Women	0.17	0.19	0.07	0.08	0.12	-0.08	0.05	0.07	0.29	1.00														
Creole	0.18	0.08	0.27	0.05	0.05	0.09	-0.11	0.01	0.02	0.19	1.00													
Indian	0.02	0.05	0.11	0.04	0.10	0.10	0.13	0.12	0.07	0.04	0.36	1.00												
Javanese	0.07	0.10	0.27	0.14	0.01	0.09	0.03	0.09	0.06	0.02	0.34	0.53	1.00											
Mixed	0.10	0.17	0.31	0.06	0.09	0.00	0.01	0.00	0.18	0.09	0.55	0.53	0.45	1.00										
Maroon+Other	0.09	0.14	0.07	0.04	0.06	0.17	0.17	0.08	0.01	0.00	0.33	0.30	0.22	0.34	1.00									
Hinduism	0.11	0.03	0.08	0.00	0.01	0.24	0.21	0.07	0.21	0.23	0.03	0.62	0.22	0.18	0.15	1.00								
Islam	0.05	0.01	0.03	0.08	0.10	0.23	0.20	0.09	0.06	0.12	0.03	0.57	0.42	0.12	0.08	0.62	1.00							
Other	0.23	0.20	0.16	0.05	0.00	0.08	0.12	0.11	0.05	0.00	0.06	0.06	0.03	0.01	0.18	0.07	0.03	1.00						
None	0.20	0.09	0.12	0.08	0.13	0.02	0.06	0.07	0.06	0.08	0.24	0.14	0.02	0.18	0.14	0.15	0.20	0.23	1.00					
Middle	0.09	0.02	0.06	0.02	0.01	0.15	0.15	0.05	0.09	0.25	0.24	0.15	0.12	0.13	0.04	0.11	0.19	0.11	0.15	1.00				
High	0.08	0.04	0.22	0.09	0.01	0.17	0.12	0.18	0.01	0.24	0.19	0.05	0.02	0.10	0.12	0.19	0.19	0.12	0.03	0.62	1.00			
Financial Stat	0.32	0.29	0.33	0.24	0.35	0.03	0.02	0.31	0.09	0.27	0.12	0.09	0.02	0.16	0.08	0.01	0.02	0.05	0.12	0.14	0.12	1.00		
Network	0.14	0.07	0.00	0.13	0.06	0.04	0.05	0.05	0.02	0.07	0.05	0.04	0.01	0.05	0.09	0.06	0.14	0.28	0.10	0.25	0.25	0.02	1.00	
Network_sq	0.14	0.06	0.01	0.02	0.02	0.00	0.00	0.03	0.03	0.05	0.03	0.08	0.01	0.01	0.09	0.07	0.16	0.22	0.08	0.23	0.20	0.00	0.96	1.00

Source: Author's calculations.

Annex 5.7: Multicollinearity test_Variance Inflation Factor (VIF)

Variable	VIF	1/VIF	VIF	1/VIF
	Probit Model 1		Probit Model 2	
Sector				
Manufacturing	1.85	0.54	1.82	0.55
Construction	2.19	0.46	2.16	0.46
Trade	2.57	0.39	2.44	0.41
Size				
Small	3.21	0.31	3.14	0.32
Medium	3.09	0.32	3.11	0.32
Age	7.70	0.13	7.46	0.13
Age_squared	3.83	0.26	3.71	0.27
Legal Status	3.47	0.29	3.50	0.29
Gender				
Equally Men–Women	1.47	0.68	1.44	0.69
Women	1.37	0.73	1.34	0.75
Ethnicity				
Creole	2.02	0.49		
Indian	3.07	0.33		
Javanese	1.50	0.67		
Mixed	2.68	0.37		
Maroon+Other	1.68	0.59		
Religion				
Hinduism			1.58	0.63
Islam			1.36	0.74
Other			1.17	0.86
None			1.38	0.72
Education				
Middle	3.48	0.29	3.57	0.28
High	4.41	0.23	4.36	0.23
Financial Statement	3.86	0.26	3.85	0.26
Network	71.46	0.01	61.81	0.02
Network_squared	33.63	0.03	30.44	0.03
Mean VIF	7.93		7.35	

Source: Author's calculations.

Annex 5.8: Logit model output

Models for Obstacle/ Independent Variables	Logit Model 1	Logit Model 2
Sector		
Manufacturing	1.856***	2.229***
	(0.672)	(0.681)
Construction	1.474***	1.790***
	(0.547)	(0.543)
Trade	0.786	1.380**
	(0.656)	(0.577)
Size		
Small	-0.0629	0.0745
	(0.585)	(0.507)
Medium	0.291	0.593
	(0.728)	(0.655)
Age	0.129**	0.122**
	(0.0510)	(0.0526)
Age_squared	-0.00206**	-0.00203**
	(0.000859)	(0.000855)
Legal Status	-1.068	-0.977*
	(0.680)	(0.592)
Gender		
Equally Men–Women	-0.914	-0.815
	(0.690)	(0.625)
Women	-0.510	-0.673
	(0.714)	(0.698)
Ethnicity		
Creole	-2.110***	
	(0.762)	
Indian	-2.452***	
	(0.793)	
Javanese	-3.170***	
	(1.138)	
Mixed	-1.498**	
	(0.759)	

Maroon+Other	-1.063	
	(1.069)	
Religion		
Hinduism		-0.355
		(0.720)
Islam		-2.056***
		(0.703)
Other		2.024*
		(1.037)
None		0.815
		(0.669)
Education		
Middle	0.823	0.251
	(0.615)	(0.638)
High	0.657	-0.284
	(0.903)	(0.756)
Financial Statement	-0.195	-0.645
	(0.601)	(0.527)
Network	0.799**	0.893**
	(0.317)	(0.370)
Network_squared	-0.0453*	-0.0539**
	(0.0233)	(0.0257)
Constant	-3.199***	-4.512***
	(1.071)	(1.381)
Observations	284	284

Source: Author's calculations.
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

Annex 5.9: Marginal effects: at means (MEM) logit model

MEM after Logit		
VARIABLES	MEM Model 1	MEM Model 2
Sector		
Manufacturing	0.433***	0.504***
	(0.137)	(0.129)
Construction	0.349***	0.409***
	(0.118)	(0.111)
Trade	0.180	0.309**
	(0.147)	(0.121)
Size		
Small	-0.0149	0.0179
	(0.139)	(0.122)
Medium	0.0713	0.146
	(0.179)	(0.161)
	0.0308***	0.0293**
Age	(0.0117)	(0.0121)
Age_squared	-0.000492**	-0.000488**
	(0.000198)	(0.000196)
Legal Status	-0.233*	-0.217*
	(0.132)	(0.119)
Gender		
Equally Men–Women	-0.206	-0.189
	(0.140)	(0.134)
Women	-0.122	-0.159
	(0.165)	(0.156)
Ethnicity		
Creole	-0.482***	
	(0.145)	
Indian	-0.538***	
	(0.137)	
Javanese	-0.620***	
	(0.137)	
Mixed	-0.356**	
	(0.166)	

Maroon+Other	-0.251	
	(0.257)	
Religion		
Hinduism		-0.0779
		(0.153)
Islam		-0.297***
		(0.0899)
Other		0.448***
		(0.173)
None		0.200
		(0.162)
Education		
Middle	0.189	0.0612
	(0.138)	(0.155)
High	0.148	-0.0653
	(0.207)	(0.173)
Financial Statement	-0.0462	-0.149
	(0.141)	(0.118)
Network	0.191**	0.215**
	(0.0762)	(0.0880)
Network_squared	-0.0108*	-0.0130**
	(0.00561)	(0.00612)
Observations	284	284

Source: Author's calculations.
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

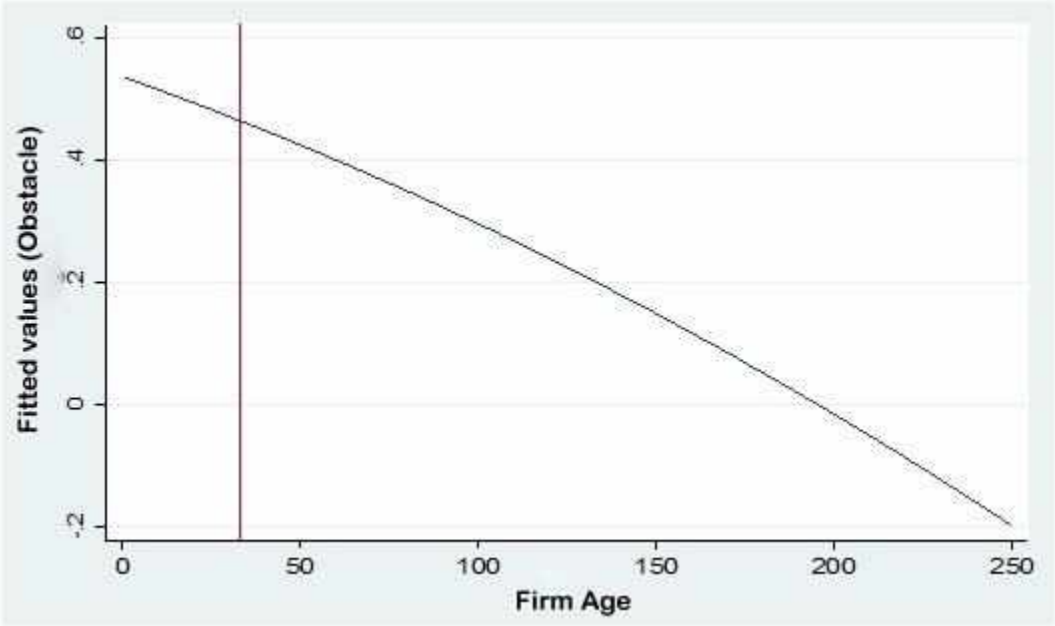
Annex 5.10: Probit model output with Weight2

Models for Obstacle Independent Variables	Probit Model 1	Probit Model 2
Sector		
Manufacturing	0.923***	1.258***
	(0.337)	(0.358)
Construction	0.820***	1.025***
	(0.292)	(0.299)
Trade	0.394	0.808**
	(0.330)	(0.325)
Size		
Small	-0.00882	0.0399
	(0.307)	(0.296)
Medium	0.180	0.383
	(0.370)	(0.366)
Age	0.0649***	0.0686**
	(0.0243)	(0.0277)
Age_squared	-0.000985***	-0.00113***
	(0.000373)	(0.000428)
Legal Status	-0.619*	-0.565*
	(0.322)	(0.334)
Gender		
Equally Men–Women	-0.532	-0.448
	(0.351)	(0.368)
Women	-0.262	-0.408
	(0.363)	(0.390)
Ethnicity		
Creole	-1.224***	
	(0.417)	
Indian	-1.292***	
	(0.383)	
Javanese	-1.910***	
	(0.571)	
Mixed	-0.796**	
	(0.403)	

Maroon+Other	-0.695	
	(0.538)	
Religion		
Hinduism		-0.200
		(0.399)
Islam		-1.232***
		(0.398)
Other		1.141**
		(0.579)
None		0.479
		(0.382)
Education		
Middle	0.392	0.165
	(0.338)	(0.368)
High	0.340	-0.156
	(0.430)	(0.432)
Financial Statement	-0.164	-0.356
	(0.295)	(0.314)
Network	0.482***	0.529***
	(0.167)	(0.203)
Network_squared	-0.0286**	-0.0323**
	(0.0119)	(0.0140)
Constant	-1.746***	-2.650***
	(0.565)	(0.723)
Observations	284	284

Source: Author's calculations.
Note: Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.10.

Annex 5.11: Turning point variable Age



Source: Author's calculations.

Annex 5.12: Participation in network by ethnicity

Ethnicity	Network (weighted responses; rounded percentages)											
	General			Managerial			Social			Total Network		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
Chinese	83	17	100	55	45	100	92	8	100	76	24	100
Creole	75	25	100	41	59	100	56	44	100	57	43	100
Indian	75	25	100	35	65	100	73	27	100	61	39	100
Javanese	62	38	100	30	70	100	72	28	100	55	45	100
Mixed	58	42	100	24	76	100	64	36	100	49	51	100
Maroon+Other	68	32	100	24	76	100	72	28	100	55	45	100

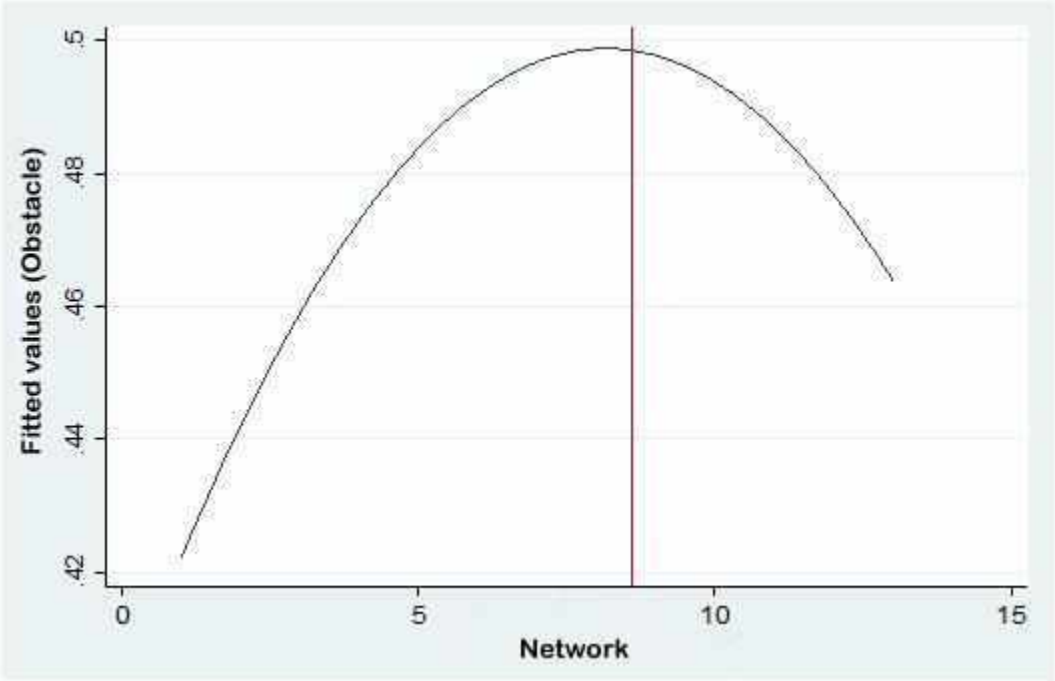
Source: Author's calculations.

Annex 5.13: Participation in network by religion

Religion	Network (weighted responses; rounded percentages)											
	General			Managerial			Social			Total Network		
	No	Yes	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
Christian	68	32	100	35	66	100	73	27	100	59	41	100
Hinduism	81	19	100	43	57	100	69	31	100	64	36	100
Islam	70	30	100	30	70	100	66	34	100	55	45	100
Other	75	25	100	49	51	99	94	6	100	73	27	100
None	79	21	100	46	55	100	77	23	100	67	33	100

Source: Author's calculations.

Annex 5.14: Turning point variable network



Source: Author's calculations.

Annex 6.1: Survey on Banks' Obstacles in MSME Financing in Paramaribo

Bank:	
Respondent/Responsible Manager:	
Position:	
Date:	

Survey on Banks' Obstacles in MSME Financing in Paramaribo

This survey is aimed to collect information on bank's opinions and experiences regarding obstacles affecting lending to micro, small and medium-sized enterprises (MSMEs) in Paramaribo and is part of the field study of Ph.D. candidate Drs. William Orie, MPA at the Institute of Social Studies, the Hague/Erasmus University. Prof. Dr. S.M. Murshed and Dr. E. Papyrakis are the promoter and co-promoter, respectively.

Confidentiality

The information obtained herein will be held in the strictest confidence. Neither your name nor the name of your financial institution will be used in any document based on this survey. Individual firm data will not be shared with anyone – including the tax authorities.

Objectives

a. To understand banks' involvement with MSME financing in Paramaribo.
b. To understand the major obstacles currently affecting MSME lending by banks in Paramaribo.
c. To understand the main challenges to the further development of MSMEs' access to finance as a means of supporting their growth.

Instruction

Depending on your bank's organization and structure, different sections could be better answered by different managers of the bank.

I. Bank's involvement with MSMEs

1. **Specifically provide your Bank's definition criteria for a Micro Enterprises (MIs), Small Enterprises (SEs), Medium Enterprises (MEs)** [select the appropriate option(s) by "double clicking" on the box (first column) followed by the option "checked"].				
		MIs	SEs	MEs
☐	Loan size: from SRD.. to SRD..			
☐	Client size in terms of average sales: from SRD.. to SRD..			
☐	Client size in terms of total assets: from SRD.. to SRD..			
☐	Client size in terms of total employees: From … to …			
☐	Other, please specify:			
☐	None			

2. **What is the current share (in %) of MSME loans in the total loan portfolio of your bank?**
……..%

3. Provide your assessment of the risk (in terms of default probability) of the average MSME loan relative to the average loan of other type. [Put an "X" in the appropriate column].			
	MSME loans are less risky than	MSME loans are equally as risky as	MSME loans are more risky than
Large corporations			
Consumers (credit card or overdraft, non-collateralized)			
Housing			

Notes:

4. Provide your assessment of the risk (in terms of percent loss after default) of the average MSME loan relative to the average loan of other type. [Put an "X" in the appropriate column].			
	MSME loans are less risky than	MSME loans are equally as risky as	MSME loans are more risky than
Large corporations			
Consumers (credit card or overdraft, non-collateralized)			
Housing			

Notes:

5. Provide your assessment of the administrative cost of MSME loans (as a fraction of loan size) relative to other loan types. [Put an "X" in the appropriate column].			
	MSME loans are less costly than	MSME loans are equally as costly as	MSME loans are more costly than
Large corporates			
Consumers (credit card or overdraft, non-collateralized)			
Housing			

Notes:

II. Obstacles to Bank's lending to MSMEs

6. Indicate to what degree the following factors are important obstacles in extending credit to MSMEs. Most important factor first, followed by the second and the third most important factor. Then rate each factor using an "X" (from not significant to extremely significant).				
Factor	Not significant	Marginally significant	Very significant	Extremely significant
6.a. Macroeconomic (economy-wide) factors (E.g. negative economic growth, macroeconomic instability, small size of the MSME sector, high interest rates, exchange rate risk, other)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.b. Regulations (E.g. Basel, anti-money laundering (AML), domestic regulations, interest-rate ceiling, reserve requirements, Suriname National Electronic Payment System requirement)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.c Legal and contractual environment (E.g. collateral law, bankruptcy regime, contract enforcement, judicial efficiency)				

List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
Factor	Not significant	Marginally significant	Very significant	Extremely significant
6.d Bank-specific factors (E.g. hierarchical bank organizational structure; lack of interest at the highest level of the bank; lack of expertise in the segment; limited geographic coverage within country [number of branches, rural presence]; bank size; inability to diversify risk across borrowers; lack of appropriate information-technology tools [scoring models, rating models]; difficulty in designing products matching segment needs; etc.)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.e MSME-specific factors (E.g. poor quality of financial statements, inability of MSMEs to manage risk, informality, inability to prosecute owner in case of default, lack of adequate collateral, difficulties in executing collateral in cases of default)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.f Nature of the lending technology to MSMEs (E.g. high entry cost, high fixed costs per transaction [relative to loan size], difficulty in standardizing products and procedures [screening, origination, monitoring, risk management], difficulty in attaining scale economies)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.g Competition in the MSME segment (E.g. presence of public banks, presence of niche players, overall narrow margins, etc.)				

List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				
6.h Lack of adequate demand (E.g. lack of sufficient demand; there is demand, but from customers that are not creditworthy)				
List up to 3 most important factors: (1) _____ (2) _____ (3) _____ **Notes:**				

Notes:

7. Are there government programs and/or policies that directly or indirectly affect your involvement with MSMEs? If yes, list the programs and/or initiatives and indicate if those have a positive or negative impact on your bank's involvement with MSMEs.

8. Give your impression of the regulatory documentation requirements (if any) for commercial lending (like audited accounts) to MSMEs. [Select the appropriate option(s) by "double clicking" on the box (first column) followed by the option "checked"].	
☐	Excessive for almost all products
☐	Excessive only for some products
☐	Appropriate and beneficial
☐	Inconsequential
☐	Other, please specify:
	If excessive, please explain which ones:

Notes:

9. Are there differences in the documentation required for commercial lending (like audited accounts) based on the size of the loan? [Select the appropriate option by “double clicking” on the box (first column) followed by the option “checked”].	
☐	Yes
☐	No

Notes:

10. Do you consider that the regulatory definition of secured loans (in terms of collateral) inhibits MSME lending? [Select the appropriate option by “double clicking” on the box (first column) followed by the option “checked”].	
☐	Yes
☐	No

Notes:

11. Indicate the most relevant obstacles to the use of non-real estate collateral in your MSME business lending – in particular, for using movable collateral. [Select the appropriate option(s) by “double clicking” on the box (first column) followed by the option “checked”].	
☐	Collateral registration
☐	Lack of, or difficulty in, monitoring
☐	Lack of enforcement mechanisms
☐	Valuation mechanisms for collateral
☐	Lack of secondary market
☐	Other, please specify:

Notes:

12. Are there issues in registering collateral that inhibit MSMEs secured lending – especially with registration of movable collateral? [Select the appropriate option by “double clicking” on the box (first column) followed by the option “checked”].	
☐	Yes
☐	No
	Please explain:

Notes:

13. Do any tax-related issues affect your appetite for MSME lending? [Select the appropriate option by “double clicking” on the box (first column) followed by the option “checked”].	
☐	Yes, positively (incentives to lend)
☐	Yes, negatively (disincentives to lend)
☐	No
	Please explain:

Notes:

14. Do you think that the government could increase the appeal of MSME lending through actions in the following areas? [Select the appropriate option(s) by "double clicking" on the box (first column) followed by the option "checked"].

	Area	Recommendations for Improvement
☐	Legal	
☐	Regulatory	
☐	Institutional	
☐	Guarantees/credit-enhancement programs	
☐	Subsidies	
☐	Credit bureaus	
☐	Judicial	
☐	Other, please specify:	

Notes:

15. Are collateral requirements higher for MSMEs than for large corporations? [Select the appropriate option by "double clicking" on the box (first column) followed by the option "checked"].

☐	Yes
☐	No

Notes:

16. If you indicated that collateral requirements are higher for MSMEs than for large corporations, indicate which of the reasons below apply or list up to 3 other factors. [Select the appropriate option(s) by "double clicking" on the box (first column) followed by the option "checked"].

☐	MSMEs are more unstable
☐	MSMEs are more informal
☐	MSMEs have poor management
☐	MSMEs are harder to evaluate
☐	MSMEs are harder to prosecute. If so, please explain why:
☐	MSMEs' collateral is more difficult to seize in cases of default
☐	Other, please specify:

Notes:

17. In your experience, out of 10 MSME loan applications received, how many are rejected?

…….out of 10

18. Please indicate the most common reasons for rejecting MSME loan applications [select the appropriate option(s) by "double clicking" on the box (first column) followed by the option "checked"].	
☐	Project feasibility
☐	Financial condition of the borrower
☐	Lack of adequate collateral
☐	Lack of financial statements
☐	Lack of SME management capacity
☐	Lack of business plan
☐	Other, please specify:

Notes:

19. How would you rate the quality of MSMEs' financial statements? [Select the appropriate option by "double clicking" on the box (first column) followed by the option "checked"].	
☐	Not reliable
☐	Low
☐	Average
☐	High

Notes:

20. How would you rate the quality of MSMEs' financial data (business plans, cash-flow forecasts). [Select the appropriate option by "double clicking" on the box (first column) followed by the option "checked"].	
☐	Not reliable
☐	Low
☐	Average
☐	High

Notes:

21. Networks Networks of firms can have an impact on access to finance. These networks can be divided into general, managerial, and social networks. In your view, have any of these networks facilitated:		
	Information on availability, terms, and conditions of credit products	Credit decisions and credit conditions (such as collateral and interest rate) by the credit provider
General Networks	Yes/No (elaborate if you wish)	Yes/No (elaborate if you wish)
1. Membership of firm in profession/trade association(s) Examples of profession associations (individuals are members): bar association, accounts association, dentist associations. Example of trade associations (companies as members): Algemene Aannemers Vereniging (AAV), Associatie van Kleine en Middelgrote Ondernemingen in Suriname (AKMOS), Associatie van Surinaamse Fabrikanten (ASFA), Vereniging van Surinaams Bedrijfsleven (VSB), Vereniging van Winkeliers (VVW).		
2. Participation in trade fairs and business seminars		
3. Firms' relationships with government agencies A firm could be a supplier or subcontractor on different projects financed by the government. Could be used as reference by the companies when applying for loans.		
4. Firms' relationships with accountants E.g. engagement of accountants on part-time basis and/or outsourcing accounting services.		
5. Firms' relationships with external accountants E.g. contracting of external accountant to audit financial statement; or there might be places/forums in which your firm can network with accountants.		
Managerial Networks		
1. Firms' relationships with competitors (regular meetings of managers of similar firms)		
2. Firms' relationships with suppliers (with key manufacturers and/or distributors/importers)		
3. Firms' relationships with firms other than competitors and suppliers		

4. Firms' relationships with costumers (frequency of communication with customers; customer rewards; organizing special events, e.g. vacation events; multi-cultural/multi-language programs)		
Social Networks		
1. Firm's director's/owner's membership of social associations/clubs (e.g. religious, cultural, ethnic, community, sports)		
2. Firm's director's/owner's relationships with friends		
3. Firm's director's/owner's relationship with families and relatives		

Notes:

22. Please share any final remarks or comments that you may have on what could be done to further support the development of access to finance for MSMEs in Suriname.

********** Thank you very much for your contribution **********

Annex 6.2: Profile of banks participating in the survey (as of 2016)

Bank name	Large/Small (L/S)	Private/ Government Ownership	Domestic/ Foreign Ownership (D/F)	Assets as % of total commercial bank assets	Credit as % of total commercial-bank private-sector credit
Surinaamsche Bank	L	Private owned (91%); Government owned (9%)	D	**78%**	**79%**
Harkrinbank	L	Government owned (51%); private owned (49%)	D		
Republic Bank	L	100% private owned	F		
Finabank	S	100% private owned	D	**17%**	**17%**
Volkscredietbank	S	100 % Government owned	D		
Surichange Bank	S	100% private owned	D		
Nationale Ontwikkelingsbank (National Development Bank)	S	100% Government owned	D		

Source: Author

Note: Two other small banks, one fully government owned and one fully private owned, did not respond to the questionnaire.

Annex 6.3: Selected macroeconomic indicators of Suriname 2014–2018

	2014	2015	2016	2017	2018
GDP growth rate (%)	0.3	-3.4	-5.6	1.7	1.9
Fiscal Balance (as % of GDP)	-4.7	-9.8	-9.4	-7.4	-11.1
External Current Account Balance (as % of GDP)	-7.8	-16.0	-5.3	-0.1	-5.2
Weighted average local currency deposit rates (%)	7.4	7.7	8.5	9.1	9.2
Weighted average local currency lending rates (%)	12.5	13.4	14.1	14.3	14.4
Official average exchange rate (SRD per US$)	3.4	3.4	6.3	7.6	7.5
Annual average inflation (%)	3.4	6.9	55.5	22.0	6.8
End-of-Year inflation (%)	3.9	25.1	52.4	9.2	5.4
Bank total credit to private sector (as % of GDP)	31.2	38.4	41.1	35.5	30.3
Bank credit to private sector in local currency (as % of GDP)	19.3	23.4	19.3	16.6	15.8
Bank credit to private sector in foreign currency (as % of GDP)	11.9	15.0	21.8	18.9	14.4

Source: Central Bank of Suriname.

Annex 6.4: Central Bank of Suriname credit-classification criteria and level of provisioning

Categories	Provisioning	Corporate credit	Consumer credit
		Delay in repayment in number of days	
1. Pass	0%	0	0
2. Special mention	5%	60	30
3. Sub-standard	20%	180	90
4. Doubtful	50%	365	120
5. Loss	100%	>365	> 120

Source: Central Bank of Suriname.

Note: the provisioning percentages and the delay in repayment in the number of days are adapted from international best practices (D. van Leeuwen, personal interview, June 12, 2020).

Annex 6.5: Networks

"Networks of firms can have an impact on access to finance. These networks can be divided into general, managerial, and social networks. In your view, have any of these networks facilitated:"		
	Information on availability, terms, and conditions of credit products.	Credit decision and credit conditions (such as collateral and interest rate) by the credit provider.
General networks	Yes/No (elaborate if you wish) (# of banks)	Yes/No (elaborate if you wish) (# of banks)
1. Membership of firm in profession/trade association(s) Examples of profession associations (individuals are members): such as bar association, accounts association, dentist associations Examples of Trade Association (companies as members): Algemene Aannemers Vereniging (AAV), Associatie van Kleine en Middelgrote Ondernemingen in Suriname (AKMOS), Associatie van Surinaamse Fabrikanten (ASFA), Vereniging van Surinaams Bedrijfsleven (VSB), Vereniging van Winkeliers (VVW).	Yes: 2 (1LB, 1SB) No: 5 (1LB, 4SB)	Yes: 0 No: 7
2. Participation in trade fairs and business seminars	Yes: 3 (2LB, 1 SB) No: 4 (1 LB, 3 SB)	Yes: 0 No: 7
6. Firms' relationships with government agencies A firm could be a supplier or subcontractor of different projects financed by the government. It could be used as a reference by the companies when applying for loans.	Yes: 2 (1LB, 1SB) No: 5	Yes: 1 (LB) No: 6
7. Firms' relationships with accountants (e.g., engagement of accountants on a part-time basis and/or outsourcing accounting services)	Yes: 5 (3LB, 2SB) No: 2 (SB)	Yes: 4 (2LB, 2SB) No: 3 (1LB, 2SB)

8. Firms' relationships with external accountants (e.g., contracting an external accountant to audit financial statements, or there might be places/forums where your firm can network with accountants)	Yes: 6 No: 1(SB)	Yes: 5 No: 2 (1LB, 1SB)
Managerial networks		
5. Firms' relationships with competitors (regular meetings of managers of similar firms)	Yes: 3 (1L, 2SB) No: 4 (2LB, 2SB)	Yes: 1 (SB) No: 6
6. Firms' relationship with suppliers (with key manufacturers and/or distributors/importers)	Yes: 4 (2 L, 2SB) No: 3 (SB)	Yes: 1 (SB) No: 6
7. Firms' relationship with firms other than competitors and suppliers	Yes: 2 (2LB) No: 5 (1LB, 4SB)	Yes: 1 (LB) No: 6
8. Firms' relationship with costumers (Frequency of communication with customers, customer rewards, organizing special events – e.g., vacation events, multi-cultural/multi-language programs)	Yes: 2 (2LB) No: 5 (1LB, 4SB)	Yes: 1 (LB) No: 6
Social networks		
4. Firms' director/owner membership of social associations/clubs (e.g., religious, cultural, ethnic, community, sports)	Yes: 2 (1LB, 1SB) No: 5 (2LB, 3SB)	Yes: 0 No: 7
5. Firms' director/owner relationships with friends	Yes: 3 (1LB, 2SB) No: 4 (2LB, 2SB)	Yes: 1 (SB) No: 6
6. Firms' director/owner relationship with families and relatives	Yes: 3 (1LB, 2SB) No: 4 (2LB, 2SB)	Yes: 1(SB) No: 6

Source: Author's calculations, based on the bank-level survey.

Legend: LB = large bank; SB = small bank.

About the Author

William Mohamed Mustafa Orie is a proud Surinamese national, born in 1970. He has been a central banker since his graduation in 1997 from the Economics Faculty of the Anton de Kom University of Suriname. In 2007, he obtained his second master's degree, in Public Administration with specialization in Governance, from the Lim A Po Institute for Social Studies in collaboration with the International Institute of Social Studies (ISS), The Hague. He is currently finalizing the Ph.D. trajectory at the ISS-Erasmus University Rotterdam, having submitted his dissertation.

William has had a vibrant career so far. Having begun as a staff member of the Monetary and Economic Affairs Directorate at the Central Bank of Suriname in 1997, he had by March 2019 risen to the position of Deputy Governor Monetary and Economic Affairs at the Bank. In between, he served as the Bank's Coordinator Monetary and Economic Affairs (September 2015–February 2019), and Coordinator of the Public Relations Department (2015–2017); was honored to be Suriname's advisor on the Executive Board of Directors of the International Monetary Fund, and Government-Provided advisor on the Executive Board of Directors of the World Bank (September 2013–September 2015); and was Government-Provided Advisor on the Executive Board of Directors of the IMF (January–July 2012). Prior to this, he served as Advisor to the Governor of the Central Bank from January 2012 to September 2013.

William has a passion for directly applicable research, analytical and strategic thinking, policy formulation, and knowledge transfer. He is aware of the capacity constraints of Suriname, as a small developing state, and is determined to contribute to capacity building in order to aid the development of his home country.

His professional interests range from monetary and exchange-rate policy to foreign-exchange-market policy and access-to-finance policy for micro, small and medium-sized firms. Having undergone a rigorous Ph.D. trajectory has enhanced his ability to contribute to policy debate and

policymaking. William beliefs in and motivates people to maximize their potential, and to remain true to their dreams as long as these continue to be meaningful and positive.

He is a passionate lecturer, and enjoys transferring knowledge and witnessing his students' progress. From 1995 to 2013, he was a part-time lecturer at various institutions, such as HAVO, Inholland Suriname, and Anton de Kom University of Suriname. In this capacity, he taught the foundations of economics, international economics, and international political economics.

In his leisure time, William enjoys playing draughts – and twice became National Champion (in 2008 and 2009) and Open Champion of Suriname in 2005. Currently, he holds the international recognized title, Maître Federation (FM), from the World Draughts Federation.