



SMALL BUSINESS, BIG GROWTH

How investing in SMEs creates jobs

International Finance Corporation

March 2021

© International Finance Corporation [2021]. All rights reserved.
2121 Pennsylvania Avenue, N.W.
Washington, D.C. 20433
Internet: www.ifc.org

The material in this work is copyrighted. Copying and/or transmitting portions or all of this work without permission may be a violation of applicable law. IFC encourages dissemination of its work and will normally grant permission to reproduce portions of the work promptly, and when the reproduction is for educational and non-commercial purposes, without a fee, subject to such attributions and notices as we may reasonably require. IFC does not guarantee the accuracy, reliability, or completeness of the content included in this work, or for the conclusions or judgments described herein, and accepts no responsibility or liability for any omissions or errors (including, without limitation, typographical errors and technical errors) in the content whatsoever or for reliance thereon. The findings, interpretations, and conclusions expressed in this volume do not necessarily reflect the views of the Executive Directors of the World Bank or the governments they represent.

The contents of this work are intended for general informational purposes only and are not intended to constitute legal, securities, or investment advice, an opinion regarding the appropriateness of any investment, or a solicitation of any type. IFC or its affiliates may have an investment in, provide other advice or services to, or otherwise have a financial interest in, certain of the companies and parties named herein.

All other queries on rights and licenses, including subsidiary rights, should be addressed to IFC Communications, 2121 Pennsylvania Avenue, N.W., Washington, D.C. 20433. International Finance Corporation is an international organization established by Articles of Agreement among its member countries, and a member of the World Bank Group. All names, logos, and trademarks are the property of IFC and you may not use any of such materials for any purpose without the express written consent of IFC. Additionally, “International Finance Corporation” and “IFC” are registered trademarks of IFC and are protected under international law.

ACKNOWLEDGEMENTS

This report, “Small Business, Big Growth: How investing in SMEs creates jobs”, was authored by Mahima Khanna, Sebastian Sarmiento-Saher, Adrian Scutaru, and Sandeep Singh, with valuable inputs from Saulo Ferreira, Sebastian Veit, and Zihao Zheng. The case studies in this publication were drawn from reports written by Dan Goldblum, Vanya Wendy Candia De Johannes, Roshin Joseph, Alice Kehoe, Mahima Khanna, Manar Korayem, Winnie Mengech, Melina Mirmulstein, Bernard Ochieng, and Hasan Shahriar.

The authors would like to acknowledge the following for facilitating and supporting the case studies: Anup Kumar Agarwal, Ashwani Arora, Hermann Bender, Ilaria Bennucci, Dima El Chafehi, Deepa Chakrapani, Raja Debnath, Alexis Diamond, William C. Haworth, Tarek Kamal, Maria Largey, Alex MacGillivray, Gaurav Malhotra, Xavier Reille, Mary El Sannady, Nilesh Srivastava, Wendy Teleki, and Paroo Tikoo. We would also like to acknowledge the insights, support, and feedback of Issa Faye, Dan Goldblum, and Hans Peter Lankes.

We had useful consultations with Paulo de Bolle, Ted Chu, Sharmila Hardi, Adel Meer, Wendy Teleki Neil Gregory, Zekebweliwai F. Geh, Florian Moelders, Camilo Mondragon-Velez, and Tristan Reed. We also received helpful input from the Office of the CEO of IFC, via Philip Schellekens.

The authors received feedback and suggestions from Martin Kanz, Alvaro Gonzalez, Inessa Love, Maria Soledad Martinez Peria, Alex MacGillivray, Paddy Carter, Najy Benhassine, Leonardo Iacovone, Sebastian-A Molineus, Gaiva Tata, Ghada O. Teima, and Mahesh Uttamchandani.

We would also like to thank Jennine Rachel Meyer, Jay Pulizzi, and Rob Wright (for advising on and coordinating the editing, design, and production process); Clarity Global Strategic Communications (for technical editing, design, and layout); Nadine Shamounki Ghannam, John Philip McNally, Gloria Orraca-Atayi, and Gessye Safou-Mat (for initial in-house consultation); and Ann Bishop (for earlier editing).

Finally, we would like to acknowledge the major data providers: the International Labour Organization (ILO) for its data on job creation estimates in emerging countries; the World Bank Group for the World Bank Enterprise Survey;

and IFC’s clients—Bank al Etihad, Au Financiers Ltd., RBL Bank Ltd., Eastern Bank Ltd., CRDB Bank Plc and Banco Ganadero S.A.—for their cooperation on data preparation for the case studies.

The authors would like to recognize the UK’s Foreign, Commonwealth & Development Office-CDC (FCDO-CDC) and the Let’s Work program for their involvement in and contribution to the RBL Bank project. The Let’s Work program is made possible through a grant from the World Bank’s Jobs Umbrella Trust Fund, which is supported by the FCDO/UK AID; the Governments of Norway, Germany, Italy, and Austria; the Austrian Development Agency; the Swiss Secretariat for Economic Affairs; the Swedish International Development Cooperation Agency; and Private Infrastructure Development Group.

Let’s Work is a global partnership that unites organizations dedicated to providing effective solutions to the global jobs crisis by harnessing the potential of the private sector to help create more and better jobs that are inclusive. Let’s Work partners include the African Development Bank Group, Asian Development Bank Group, Austrian Federal Ministry of Finance, Department for International Development, European Investment Bank, European Development Finance Institutions, Inter-American Development Bank, International Labor Organization, International Youth Foundation, Islamic Corporation for Development of Private Sector, Ministry of Foreign Affairs of Netherlands, Overseas Development Institute, Private Infrastructure Development Group, Swiss Secretariat for Economic Affairs, World Bank Group, and World Business Council for Sustainable Development.

ABBREVIATIONS AND ACRONYMS

A2F	Access to finance	ILO	International Labour Organization
CAGR	Compound annual growth rate	MSMEs	Micro, small, and medium enterprises
CAR	Capital adequacy ratio	OLS	Ordinary least squares
DFI	Development finance institution	PSM	Propensity score matching
EBL	Eastern Bank Limited	SMEs	Small and medium enterprises
ES	Enterprise Survey		

Note: All dollar amounts in this report are U.S. dollars unless otherwise indicated.

GLOSSARY OF TECHNICAL TERMS

Churn rate	The average rate at which banks roll over their loan book after SME customers repay their loans. It can be measured as 1 over the loan tenor (the inverse of tenor).	Ordinary least squares (OLS)	A method to estimate regression coefficients that can be used to summarize data or make predictions.
Fixed effects model	This model treats random variables as non-random (i.e. fixed)—holding as constant the average effects for a variable that may affect the outcome of the analysis.	Propensity score matching	This method uses sets of participants in treatment and control groups (assigned by their propensity to be in each group) to approximate a random experiment that mitigates selection bias in observational studies.
Fungible	Something that is mutually interchangeable—it can replace or be replaced by another identical item. Money is fungible because it is freely replaceable, in whole or in part, for a separate amount of money.	Regression	A technique to determine the statistical relationship between two or more variables where a change in the dependent variable is associated with a change in the independent variable.
Gazelle	A small, yet fast-growing business that contributes significantly to job creation.	Selection bias	This occurs when the population studied in a sample is not representative of the target population, which distorts the conclusions drawn from the analysis.
Heckman correction	A two-step estimator aimed at correcting selection bias in treatment and control groups. Also known as “Heckit”.	Standard error	A measure of the variability of a statistic and an estimate of the standard deviation of a sampling distribution.
Multiplier	A factor that amplifies or increases the base value of something else, such as job creation.	SME	Defined differently across industries and regions, but is generally a business with 10 to 249 permanent employees or a firm that borrows between \$10,000 and \$1,000,000 (see loan size proxy).
Jobs created	The new, additional jobs that firms create, as measured by the change between the baseline and endline results.	Unobservable variables	Variables that affect a dependent variable but cannot be controlled for, due to a lack of data and/or data that cannot be measured (such as informal loans between friends and family that fall outside of financial data collected by regulators).
Loan size proxy	A way to differentiate otherwise amorphous SMEs into discrete groups based on the size of their loans. IFC’s SME loan size proxy definition looks at a range of loans between \$10,000 and \$1,000,000: loans of \$10,000 to \$100,000 are small, and from \$100,000 to \$1 million are medium-sized.		

CONTENTS

2	Abbreviations and Acronyms
2	Glossary of Technical Terms
4	Foreword
6	Executive Summary
10	Chapter 1: Literature Review
18	Chapter 2: IFC's SME Finance Footprint and Reach
22	Chapter 3: Estimating the Cross-Country Development Effects of SME Finance
41	Chapter 4: IFC Case Studies—How SME Finance Supports Job Creation and Growth
84	Chapter 5: Summary Conclusions—Implications for DFIs and Private Financial Institutions
87	Bibliography
91	Annex: Statistical Tables



FOREWORD

WORLD BANK GROUP TWIN GOALS

- End extreme poverty
- Promote shared prosperity

In developing countries, small and medium enterprises (SMEs) account for more than half of all formal employment. But these businesses often struggle to obtain the financing they need to grow and create jobs. SMEs face a \$4.5 trillion funding gap in emerging economies, a critical constraint on their progress.

This is exacerbated in times of crisis, such as the 2008/09 global financial crisis or the recent Covid-19 pandemic in which SMEs across the world have lost business and subsequently struggled to pay bills and wages.

IFC is committed to supporting small businesses by providing investment and advisory services through our global network of financial institutions. While we can readily track the number and size of SME loans made by our client financial institutions, estimating the number of jobs created as by-products of this lending activity is a far greater challenge.

This report shows how we have improved our measurement of the estimated number of jobs created following SME loans. It focuses on the relationship between the size of loans provided to small businesses and the number of jobs these enterprises create.

As detailed in these pages, we found that every million dollars loaned from various banks and financial institutions to SMEs in developing countries over a two-year period was associated with the creation of an average of 16.3 additional permanent jobs when compared to firms that did not have access to finance. Applying that jobs multiplier specifically to the SME loan portfolios of IFC's client financial institutions suggests that in 2018 the availability of financing from those institutions was related to the estimated creation of between 4.7 million and 6.1 million additional permanent jobs.

Those findings are notable, but the report's true value lies in its updated methodology, which we believe will allow IFC, the wider community of development finance institutions (DFIs), and private financial institutions to improve how they measure the development impact that greater access to finance has on real-world SMEs.

An updated methodology will allow DFIs to improve how they measure the development impact that greater access to finance has on real-world SMEs

The new methodology detailed in these pages will have three practical benefits. It will:

- Provide relevant information for the lending, advisory, and other services of DFIs and their financial institution clients.
- Help local financial institutions demonstrate their impact to regulators and investors.
- Provide an additional tool for gathering supporting evidence that demonstrates the value of providing financing to SMEs, which will help DFIs respond to questions from their stakeholders.



By focusing on SME finance across a range of developing countries, this report delivers a more granular analysis that can serve as a solid basis for future investigation. It also demonstrates that backing SMEs has a triple bottom line: it helps businesses expand and create jobs, it is good business for local banks, and it provides proof of impact for DFIs.

There is still much work to be done. Although the results presented here are based on IFC and World Bank data, they do not fully capture the potential outcomes of SME financing initiatives beyond the World Bank Group's activity. While no methodology can be effective without quality data, collecting such data on SME financing can be challenging. It requires significant resources to survey an adequate sample of SMEs.

To meet this challenge, DFIs should collaborate to tackle the gap in data on SME financing outcomes through better data collection and sharing. As a first step, the methodology

Backing SMEs has a triple bottom line: It helps businesses expand and create jobs, it is good business for local banks, and it provides proof of impact for DFIs

presented in this report serves as a publicly available tool into which DFIs may feed data to inform their own impact measurement.

At a higher level, sharing SME finance data would refine the analysis contained in this report, adding further value to DFIs' SME insights. Such partnerships are highlighted in the report and can serve as a sound basis for future enhanced collaboration. We look forward to strengthening these

relationships further, deepening our collective impact, and helping many more small businesses to thrive.



A handwritten signature in black ink that reads 'John F. Gandolfo'.

JOHN F. GANDOLFO
Acting Vice President
Economics and Private
Sector Development

EXECUTIVE SUMMARY

IN SUMMARY

- This report examines the relationship between SME loan size and job creation.
- Every \$1 million loaned to SMEs in developing countries is associated with the creation of an average of 16.3 direct jobs created over two years.
- Extrapolating from the model shows that lending activities by IFC's clients was related to the creation of an estimated 4.7 million to 6.1 million jobs in 2018.

This report aims to capture the key constraints that SMEs typically confront and provide a methodology better suited to measuring the job creation effects of SME finance initiatives by DFIs like IFC.

World Bank Group research shows that, out of the 20.75 million SMEs in developing countries, about 9 million had unmet pre-Covid-19 financing needs. This accounted for a staggering \$4.5 trillion funding gap (IFC 2017).¹ As a result of the Covid-19 crisis, it is likely that the number of constrained firms and financing gaps increased.

On top of this financing challenge, the World Bank (2012) estimates that about 40 million jobs will need to be created annually over a period of 15 years to employ the rapidly growing workforce in emerging markets and developing economies. Given this context, the private sector will play a critical role in meeting the employment challenge across developing countries.

As a member of the World Bank Group, IFC promotes private sector-led growth to help achieve the twin goals of ending extreme poverty and promoting shared prosperity.²

As part of its mission, IFC provides both investment and advisory services to financial institutions (FIs)³ in developing countries—with a significant portion of this support targeted at expanding access to finance for SMEs to support their growth, create permanent jobs,⁴ and contribute to poverty reduction.

This report presents an updated methodology to estimate the number of SME jobs created as a result of SME loans.⁵ It analyzes job multipliers across developing countries through a firm-level regression of annual employment change on loan size. Put simply, the framework presented here analyzes the relationship between the size of loans to SMEs and the jobs these enterprises create.

This methodology builds on previous papers that found an association between access to finance and job growth,

¹ For more information, see <http://www.worldbank.org/en/topic/sme/finance>

² Specifically, the World Bank Group has two goals for the world by 2030: dramatically reduce extreme poverty by decreasing the percentage of people living on less than \$1.90 a day to no more than 3 percent, and promote shared prosperity by fostering the income growth of the bottom 40 percent in every country.

³ Local banks that receive funding/support from IFC are referred to as “clients” or “partners” in this report.

⁴ This publication will focus on the creation of permanent jobs. The absence of such jobs does not necessarily result in unemployment, but rather *underemployment for the working poor*. Furthermore, the focus of this report is on direct jobs created from SME financing and not on indirect jobs for the SMEs’ suppliers. While the authors acknowledge the likelihood of spillover effects in the broader value chain, those are not examined here.

⁵ This methodology is only applicable to SME finance and cannot be applied to other sectors.

including Ayyagari et al. (2016),⁶ and draws on data from the World Bank Enterprise Survey (ES) and IFC’s own “tracer surveys” to develop a new SME jobs multiplier that would allow for the estimation of job creation effects that correlate with SME loan size.⁷ The use of tracer surveys has enabled IFC to analyze how the SME customers of a particular IFC partner financial institution have benefited from greater access to finance and generated positive developmental impacts such as greater SME growth, productivity, and female ownership.

By combining cross-country econometric estimation with the results of real-world case studies, this report contributes to the literature that aims to quantify the job creation effects of improving SMEs’ access to finance. The model allows for top-down analysis that estimates job creation multipliers such as the number of jobs created per \$1 million in financing.

The two main conclusions are:

- Over two years, every million dollars loaned to SMEs in developing countries is associated with the creation of an average of **16.3 additional permanent jobs** when compared to firms that did not have access to finance.⁸
- Extrapolating this result to the SME loan portfolios of IFCs’ client financial institutions suggests that in 2018,⁹ due to those client lending activities, the availability of financing was related to the estimated creation of **between 4.7 million and 6.1 million additional permanent jobs**.¹⁰ Chapter 3 explains the extrapolation method in more detail, which uses other inputs for the calculation such as the average tenor of loans.¹¹

This report focuses not on causality but on the impact of access to finance (A2F) and the intensive margin of the effect of loan size on job creation. Loan size is the



⁶ Ayyagari, Meghana, Pedro Francisco Juarros, Maria Soledad Martinez Peria, and Sandeep Singh. 2016. “Access to Finance and Job Growth: Firm-Level Evidence across Developing Countries.” World Bank Research Paper No. 7604. Washington, D.C.: World Bank.

⁷ At IFC, such tracer surveys are undertaken through face-to-face interviews with SMEs or through expanded appraisal/supervision, which gathers data by conducting a review of SME loan files.

⁸ This result is based on a financial institution’s total SME loan book growth and not on individual \$1 million loans to firms, as there will be many loans that are each less than \$1 million, but collectively contribute to the result.

⁹ 2018 is the most recent year for which data were available for the analysis because 2019 data collection was delayed due to Covid-19.

¹⁰ These estimates are based on the IFC clients’ overall SME lending activities. The distinction between what part of the clients’ SME portfolio change, and thus contribution to job creation, comes from IFC’s investments is hard to disentangle. As a conservative estimate, if we were to only rely on the on-lending of IFC’s funds, the estimated SME jobs created in 2018 range from 518,166 to 673,053.

¹¹ In the absence of disbursement data, and because the portfolios of banks are constantly churning loans, the job creation result needs to be adjusted by an average tenor of loans. The mechanics and rationale for this are discussed in Chapter 3.

variable of interest in this report’s analysis, instead of just access to a loan. The methodology used here introduces several controls as robustness checks, including the Heckman two-step correction, to deal with selection bias.¹² The baseline regression is a firm-level regression of annual employment change on loan size and is estimated using ordinary least squares (OLS) with standard errors clustered at the country-year level or regional level.

The analysis considers:

- firm-level characteristics (such as size, age, and female ownership status)
- country-level variables that can affect employment changes (including inflation and GDP growth)
- country or region fixed effects
- year fixed effects

The job creation multiplier is robust to various additional specifications, such as unweighted estimations, survey weights for weighted estimations, restricting the sample to remove the undue effects of outliers, and the Heckman correction noted earlier.

This exercise does not determine attribution between IFC investments and SME job creation, but rather seeks to identify any observed correlation between local bank SME loan size and subsequent job growth, after controlling for firm- and country-level variables.

There are two main reasons why the multipliers and extrapolated job numbers in this publication are higher than those reflected in the results of similar studies¹³ explored in the literature review:

- SMEs in developing countries are more labor-intensive than those in developed countries.

- The cross-country focus of this analysis covers more jurisdictions than other single-market studies.

The multipliers presented here are based on a robust and replicable methodology that can be updated when new data become available, whether from IFC or other organizations.

While it is important for IFC to assess the development impact of the financial institutions it supports, the framework presented in this report can be useful for all DFIs that have SME finance commitments and seek to further understand the impact of their work in this area. DFIs can run the model of this report with their own data to see the job creation effects that the SME finance operations of their partner financial institutions are having.

As noted in the Foreword, this methodology may serve as a tool for DFIs that have a responsibility to demonstrate that their investments are reaching the right targets. Indeed, one of the primary motivations for conducting the research presented in this report was to put numbers on the job creation impact that improving SMEs’ access to finance can have in developing economies.

The debate about SME job creation is nuanced—and the methodology presented in the following chapters can serve as a step towards achieving more clarity on the impacts of SME financing.

Although this report used IFC and World Bank data, in principle it shows the results that can be achieved with every \$1 million loaned to SMEs, regardless of which DFI does the lending. The authors invite other multilateral development banks and DFIs to tailor the model presented here to their tasks and standards in order to showcase their own results.

¹² The Heckman correction, or “Heckit”, is a two-step estimator aimed at correcting selection bias due to non-random assignment to treatment and control groups.

¹³ Center for Economics and Business Research (2016) established a multiplier of 2.5 based on U.K. data; Brown and Earle (2015) did a U.S.-focused study that resulted in a 3-3.5 multiplier; and Ayyagari et al. 2010 focused on China. It should be noted that these multipliers are per year.

STRUCTURE OF THE REPORT

The report is divided into five chapters:

- **Chapter 1** reviews the literature about financing SMEs and the associated development outcomes.
- **Chapter 2** summarizes IFC’s activities related to SME finance, and gives context on the source of some of the data used in this report.
- **Chapter 3** outlines the methodology of the econometric estimating model, the data sources, and the model’s specifications.
- **Chapter 4** outlines the methodology used in conducting tracer surveys and presents the results from six case studies in South Asia, the Middle East, Latin America, and Sub-Saharan Africa.
- **Chapter 5** summarizes the implications of this report for DFIs and private financial institutions (including banks and non-bank financial institutions) that have been working to increase SMEs’ access to finance by investing in and lending to them.



NOTE: It may be useful to read the summary conclusions presented in Chapter 5 in conjunction with this Executive Summary.

The report concludes with an **Annex**, which provides a series of statistical tables underpinning the methodology.

LITERATURE REVIEW

IN BRIEF

This chapter:

- Summarizes the extent to which access to finance is a constraint for SMEs
- Reviews the literature on how access to finance can support enterprise growth
- Explores relevant papers on how SME growth can contribute to development — in particular, by creating jobs and raising productivity in an economy

A growing body of literature reinforces the notion that, in developing economies, formal SMEs employ a large share of the total workforce and create the most jobs.¹⁴ Data on firm dynamics in developing economies suggest that, to a significant degree, aggregate productivity and growth are held back by certain constraints that affect SMEs more than larger or informal firms. However, although the exact extent of the economic impact of SMEs is still a relatively open empirical question, there appears to be consensus in the economic literature on the positive outcomes that SMEs can achieve.

The authors focus on literature most relevant to the relationship between increased SME access to finance and SME employment and productivity growth. Broader areas—including the positive spillover effects that SMEs can have on other development problems such as access to clean energy and water, health services, and education—are beyond the scope of this report. (See World Bank 2016 for more information on SME spillovers.)

Our starting point is the global \$4.5 trillion SME finance gap (IFC 2017b). Figure 1.1 below shows the relative dimensions of this gap by region and reveals the implications it could have, both for aggregate employment and women's participation in



the workforce. It also looks at the formal SME jobs needed annually through to 2030 (IFC 2013). The micro, small, and medium enterprise (MSME) finance gap for each region could evolve over time, especially as less developed countries grow and more SMEs (with a greater demand for finance) appear.

While some key barriers (such as taxes or permits) are linked to government policy, a major and consistent barrier for developing country SMEs is their lack of access to finance—a barrier that the private sector can address through lending and investment.

However, the private sector may not be able to resolve the SME finance gap on its own.

¹⁴ This paper focuses on SMEs in the formal economy with 10 to 249 permanent employees. For a review of the status of informal firms, see MSME Finance Gap (IFC 2017): pp. 40–42.

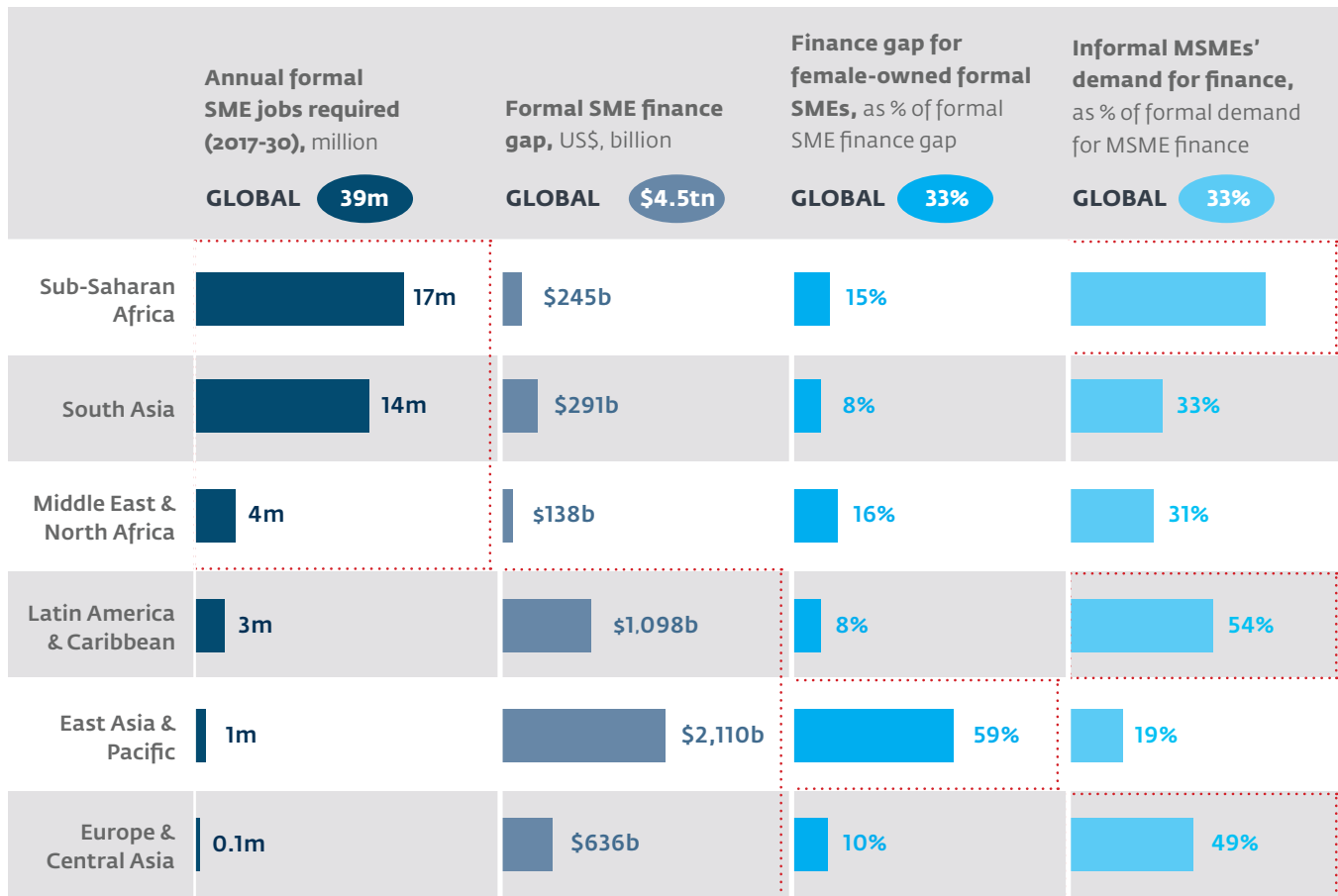


Figure 1.1: The main opportunities and challenges in providing SME finance, by region¹⁵

Source: IFC. 2013. *World Development Report* and IFC. 2017b. *MSME Finance Gap*.¹⁶

Access to finance versus other obstacles

Among the many obstacles that businesses face across the world, there are reasons why access to finance should receive attention. Enterprise owners in developing countries

report that access to finance is one of the most binding constraints they face (IFC 2013). In some reported cases, it is identified as the leading barrier to growth. Based on more recent data, Figure 1.2 shows how a lack of access to finance continues to rank among the top obstacles to the everyday operation of SMEs.¹⁷

¹⁵ The jobs estimate for 2030 comes from the 2012 WDR. It is an estimate of the number of new jobs required by 2030 to maintain the same employment rate as in 2012. Since the greatest population growth in developing countries from now until 2030 is likely to come from Sub-Saharan Africa and South Asia, these are the regions with the highest estimates of jobs required. The firms in these regions are also more labor-intensive in comparison to firms in East Asia.

¹⁶ The gap will be the highest in East Asia & Pacific because there are more firms in the region. However, since the region's GDP is higher—and characterized by more developed financial and capital markets—the percentage share of the SME finance gap to GDP may go down.

¹⁷ The data came from all the developing countries covered in the World Bank Group's Enterprise Survey (ES). Only ES questionnaires were used, based on the most recent year for each country. Syria and Oman were dropped due to data incompatibility. Median weighting was applied.

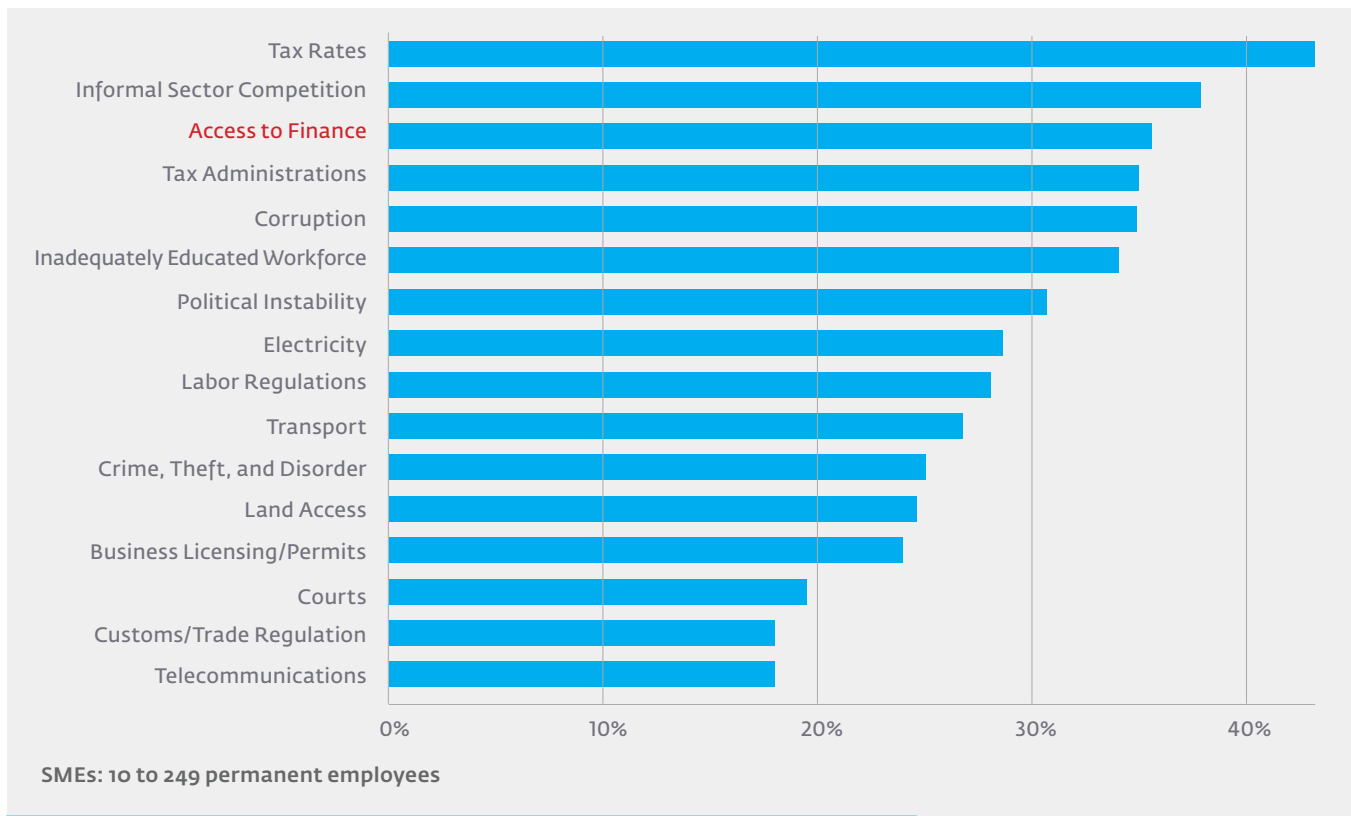
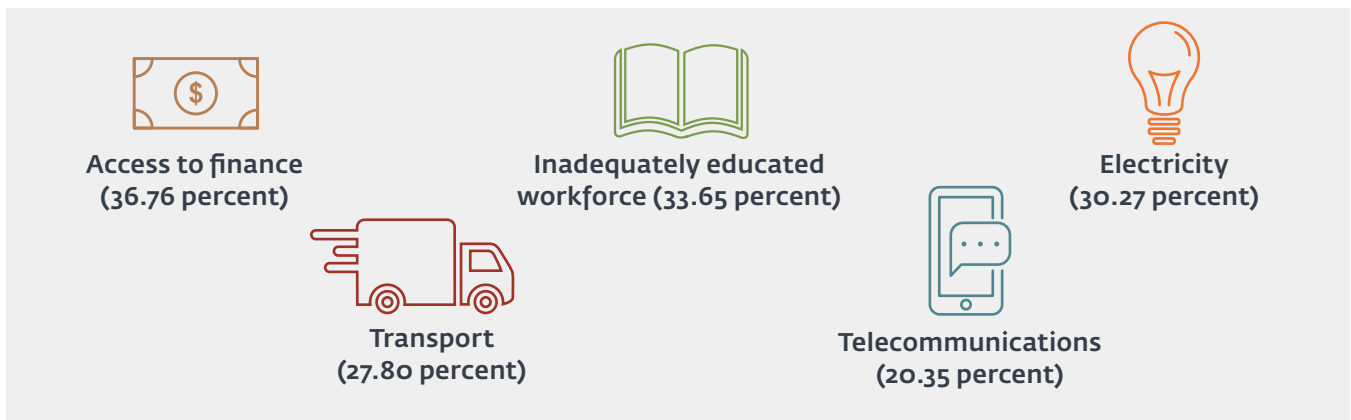


Figure 1.2: Percentage of SMEs reporting each type of severe obstacle¹⁸

Source: Authors' calculations, based on the most recent ES Enterprise Survey data as of December 2018.¹⁹

Restricting the listed obstacles to those that the private sector can directly influence (without depending on changes in policy from government, for example) results in the following list:



Among this smaller group, the percent figures are weighted and correspond to the proportion of SME respondents reporting obstacles that were “severe”.

¹⁸ A “severe obstacle” is one reported as moderate, major, or very severe. In this case, SMEs are those that have 10 to 249 permanent employees.

¹⁹ Data were taken from the World Bank Group’s Enterprise Survey (ES). For each developing country in the dataset, the latest available survey was selected with the number of observations (plus those from internal IFC sources) at around 50,257 in 144 countries. As noted in footnote 17, Syria and Oman were not included due to incompatible variables. All countries followed the same methodology, which allowed comparisons across countries. Median probability weights were applied for each calculation. For more information about the ES and its methodology, see: <http://www.enterprisesurveys.org/>

Based on the above, access to finance once again emerges as a leading obstacle (in terms of frequency and severity) that the private sector can potentially alleviate in the course of doing business. Of the third of surveyed SMEs (36.75 percent) that continue to be hindered by insufficient access to finance, 5.73 percent of owners listed access to finance as a “very severe obstacle,” 11.08 percent as a “major obstacle,” and 19.94 percent as a “moderate obstacle.”²⁰

Effect of access to finance on firm growth, productivity, and development

While access to finance comes up in surveys, there is empirical evidence that acting upon that constraint can lead to positive outcomes. A study by Ayyagari et al. (2010) found that, unlike other reported business constraints, firm growth is directly affected by financial access. This is true whether firm growth is measured by employment or by sales growth. Empirical studies by Rajan and Zingales (1998), Levine (2004), Honohan (2004), and Rahaman (2011) also support the idea that access to finance is vital for firms in developing countries.²¹

How does access to finance lead to firm growth? According to research by Gries and Naudé (2010) and Acs, Desai, and Hessels (2008), there are several channels through which SME development could lead to growth. These include an improved ability to innovate, as well as the employment, productivity, wages, innovation, and ability to create greater numbers of better paid, high productivity jobs.

There is some empirical evidence that confirms SMEs’ contribution to growth via employment, at least for developing economies.²² Relevant studies that examine the relationship between increased access to finance and employment growth include those by Aga et al. (2015), de Kok et al. (2011), and Ayyagari et al. (2015).

Studies by Pagano and Schivardi (2003), Sleuwaegen and Goedhuys (2002), and Ayyagari et al. (2015) were less conclusive about the relationship between increased access to finance and growth in SME productivity. The reason is that the effects of access to finance on productivity are diluted by other factors such as poor institutional quality, market failures, and barriers to entry in global trade. This leaves considerable scope for further research on these elements.

That said, access to finance is considered an important instrument for enhancing SME performance, and may ultimately translate into broader economic growth and development. Figure 1.3 maps the theoretical routes that lead from financing (such as an SME loan) to impacts at the borrower level, market level, and, ultimately, the macroeconomic level. Increased access to finance allows firms to use external financing rather than rely on their own finances, which can take years of saving or borrowing from informal sources such as family, friends, and money lenders. Having access to external financing is crucial when it comes to industrial expansion. Using data from the United Kingdom and Ireland, Rahaman (2011) concluded that external financing has a higher impact on firms’ employment growth than internal financing. An influential paper by Rajan and Zingales (1998) found that sectors that require external financing develop faster in countries where financial markets are well developed.²³ These conclusions are also supported by Levine (2004) and Honohan (2004).

There is a considerable body of work analyzing how an improvement in access to finance impacts SMEs and can subsequently have significant effects on the wider economy. Based on data from six developing countries, a modeling exercise by Dabla-Norris et al. (2015) found that improvements in various financial constraints on SMEs can have a positive effect on economic growth, provided the improvements are properly implemented and accompanied by quality institutions.

²⁰ On the other side of the spectrum, 23.70 percent of owners listed access to finance as a “minor obstacle” and 39.55 percent of firms said that access to finance was “not an obstacle”.

²¹ These authors examine SMEs as well as large firms in their respective papers, but the results reported here apply to SMEs.

²² In developed economies, the evidence is not as obvious, as described by Haltiwanger et al. (2013), Decker et al. 2014, or Criscuolo et al. (2014).

²³ While this study is sector-focused (rather than firm-focused), the implication here is that firms that are within a sector that uses external finance will develop faster, provided that financial markets are developed as well.

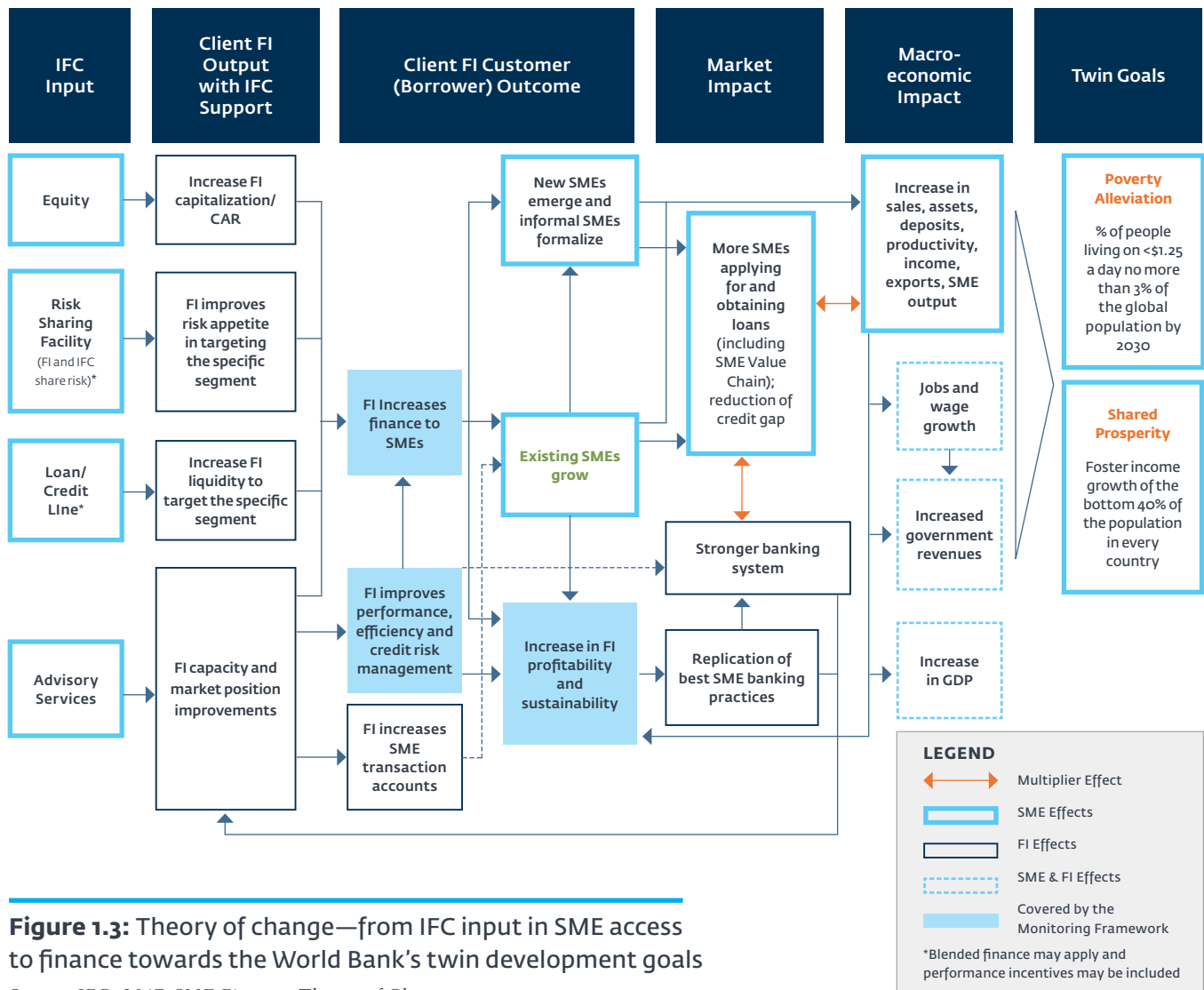


Figure 1.3: Theory of change—from IFC input in SME access to finance towards the World Bank's twin development goals

Source: IFC. 2017. *SME Finance, Theory of Change*.

Dabla-Norris et al. argue that while the overall effects on GDP can be positive, they depend on institutional quality and the methods for implementing the reforms. Using microeconomic data, Ayyagari et al. (2007) found empirical evidence that, across the world, improving access to credit correlates with a larger SME sector.

Relationship between SME size and finance outcomes

It is important to note that the effects of access to finance can differ according to the size and other attributes of enterprises. According to de Mel et al. (2008) and McKenzie and Woodruff (2008), improved access to

finance for equipment purchases improved the return to capital of small enterprises and microenterprises.

Hsieh and Olken (2014) warned that providing microcredit for microenterprises (firms with up to 10 employees) may incentivize such firms not to grow, especially if they perceive that growing into a larger firm (50 employees or more) will result in licensing or regulatory constraints that are too cumbersome to overcome. While this phenomenon may confound the study of microenterprises, in practice SME growth depends on many factors, including the sector and location, as well as the gender of the owner. This leaves room for further research to determine how significant these constraints are and whether they can be

addressed by policy changes that are beyond the scope of what the private sector can achieve.

It is generally accepted that the relationship between improved access to finance and firm outcomes such as employment or productivity growth is inherently endogenous—that is, it is difficult to establish whether more access to finance leads to more growth or vice versa. Aterido, Hallward-Driemeier, and Pagés (2007) analyzed the effects of various constraints on employment growth across firm types and sizes based on 70,000 enterprises in 107 countries. These constraints concerned finance, corruption, regulations, and infrastructure. The authors found that, for the same amount of financing, the smallest firms gained the most in terms of jobs, while between exporters and non-exporters, improved capital markets had a greater impact on non-exporters.



As we have emphasized, this report focuses on job growth and productivity. The results are driven by several factors, such as i) the age and size of firm (Sleuwaegen and Goedhuys 2002, Kuntchev et al. 2013, Beck et al. 2005, and Ayyagari et al. 2016); ii) the type of firm: subsistence versus growth-oriented (Berner et al. 2012); iii) the initial level of financial constraint (Banerjee and Duflo 2014, Kuntchev et al. 2013); and iv) the formality of the financial channel (Ayyagari et al. 2010 and 2016, as well as others).

However, as can be seen in the papers described below, even when these factors are considered, firms with greater access to finance tend to reveal greater productivity and more job creation (Campello and Larrain 2015).

The size of any enterprise is undoubtedly a key element affecting its activity and performance. This has been proven many times in papers such as those by Ayyagari et al. (2015), Pagano and Schivardi (2003), Agarwal and Audretsch (2001), and Evans (1987).

When it comes to job creation in developing economies, Ayyagari et al. (2016) found that SMEs (in their definition, those with fewer than 100 employees) have higher sales and

employment growth than is the case for large firms (more than 100 employees).

A similar result was reported by Aga et al. (2015), who found that SMEs (with up to 100 employees) have a higher net job creation growth rate than larger firms.²⁴ However, large firms tend to experience higher productivity growth (Van Biesebroeck 2005). Access to finance can help SMEs catch up with larger companies in terms of size, employment, and productivity.

Improved access to finance seems to have a greater and more positive effect on SMEs (compared to their larger peers) in terms of job creation. This finding has been reported by authors such as Beck et al. (2005), Aterido et al. (2007), Ayyagari et al. (2007), and Banerjee (2014).

Sleuwaegen and Goedhuys (2002) tested this result in Côte d'Ivoire and concluded that the size of the firm affects both employment and sales growth. But, more importantly, in terms of enterprise performance, improving access to finance has a greater impact on smaller firms than on larger ones.

Although external financing can be provided through both formal and informal channels, firms in developing countries tend to use informal channels. A study by Ayyagari et al. (2010) assessed which of the channels ultimately has the greatest impact on firms. The authors analyzed financial access in China and found that formal financing from banks and other financial institutions had a greater impact on firms' sales and employment growth than was the case with financing from family members and other informal sources. The authors concluded that informal financing has little impact on enterprise activity—which implies that the institutional context of access to finance matters greatly. Given that the Ayyagari et al. (2010) paper focuses on China, general study of the effects of informal and formal finance would benefit from further research in different economic settings, particularly in small and open developing economies.

²⁴ Net job creation is defined as the difference between job creation minus job destruction.

Although having access to finance has clear benefits, it is important to note that there are several broader issues that limit the effects of improved access to finance, such as lenders' lack of technical capacity, government corruption, and public health crises. Beck et al. (2005) found—perhaps not surprisingly—that financial underdevelopment has a negative effect on firms' sales growth, especially in the case of SMEs. While a bank's willingness to lend to SMEs is important, its capacity to do so may be constrained by a lack of physical and social infrastructure. Furthermore, Ayyagari et al. (2015) found that the condition of financial institutions themselves greatly influences the productivity of supported enterprises. In other words, where the quality of a financial institution is poor (characterized by low capacity and/or corruption) there is a negative effect on SMEs' performance.

As Beck et al. (2005) showed when performing their analysis across countries, even though SMEs' share in total number of firms is positively correlated with economic growth and poverty reduction, this relationship fades when applying econometric techniques to control for endogeneity. This suggests that SMEs' development is indeed linked to increased economic expansion; it is not an external, standalone factor that determines growth.

Based on the literature reviewed above, it appears that, in general, improving access to finance can enhance SMEs' contribution to economic development and generate more growth.

Gaps in the literature and the contribution of this report

Few studies present cross-country analyses with multipliers that quantify the effect of access to finance on SMEs in developing countries. The typical approach in the literature is either to use cross-country macro data (Rajan and Zingales 1998; Dabla-Norris et al. 2015; Acs, Desai,

and Hessels 2008; Pagano and Pica 2012; and others) or microdata for a country/region (Sleuwaegen and Goedhuys 2002; Rahaman 2011; Campello and Larrain 2015; Banerjee and Duflo 2014; Ayyagari et al. 2010; and others).

On their own, both methods have limited scope because they cannot be used to compare results, since using only macro data typically omits country-specific details, whereas micro studies have limited external validity. As a result, these methods cannot be easily operationalized by financial institutions or DFIs working to encourage growth by addressing SME constraints.

To resolve some of these methodological drawbacks, another body of literature attempted to combine the two approaches by looking at micro data across countries (Aterido et al. 2009; Cull and Xu 2011; Kuntchev et al. 2013; Ayyagari et al. 2007, 2014, 2015, and 2016; and Martinez Peria et al. 2014). However, these papers do not have multipliers linked to the amount of financing that SMEs receive.²⁵ While a cross-country analysis is needed to avoid biased results that are driven by country- or regional-specific dynamics, a multiplier is also needed to give a quantifiable metric for institutions that want to measure the effects of access to finance on SMEs. To address the issue, this study adds to the existing body of literature an updated methodology that uses cross-country data and quantifies the job creation and productivity effects of SME financing across developing economies.

Another gap in the literature relates to the paucity of data to measure these developmental effects. Most studies have used Enterprise Survey (ES) data to assess the impact of access to finance in developing countries. However, as acknowledged by Ayyagari et al. (2014), these data sources have limitations, including a lack of informal sector coverage, the exclusion of microenterprises by survey design, or a focus on surviving firms.²⁶ In addition, as the

²⁵ Although this report uses cross-country micro data, firms are undoubtedly impacted by external finance heterogeneously. The tracer surveys (described later) are a way to double-check the quantitative estimates. Both the quantitative and qualitative analysis presented here reveal similar results, making them more trustworthy.

²⁶ This study's reliance on surviving firms leaves the analysis vulnerable to an upward bias in the results since the data do not capture all the firms that obtained finance, but then went bankrupt. Although it would be ideal to be able to calculate a "negative job impact", the available data do not allow for such an analysis. However, this is a gap the authors highlight for future research.



ES is a repeated cross-country survey of firms, it may not follow the same firms over an extended period. This limits the extent to which empirical assessments can be made about development outcomes because determining net job creation requires data from firms that can survive long enough. The timing of the survey could also affect the results.

To address these concerns, this report supplements ES data with primary data collected through tracer surveys, after carefully matching the two data-sets.²⁷ Tracer surveys collected data on the SME beneficiaries of some of IFC's client financial institutions through expanded appraisals/supervision and micro case studies.

By conducting tracer surveys of financial institutions' SME beneficiaries, this paper tests the findings and attempts to determine if there are qualitative attributes that may result in deviation from the model. (See Chapter 3 for tracer survey descriptions and information.)

This mixed-methods approach adds extra linkages between access to finance and SME growth and tries to compensate for the shortcomings of relying solely on the ES.

Conclusion

As this chapter has demonstrated, there is a gap in the approach to measuring the developmental effects of SME finance. Data to measure these effects are currently limited and, as a result, most studies have focused on a representative sample of SMEs from a single financial institution, country, or region. As far as the authors are aware, a cross-country comparison that estimates the effect of access to finance on SME job creation and productivity has yet to be carried out for developing countries.

This report seeks to address this gap in the literature with an updated econometric methodology based on a mixed-method approach, supported by six case studies from South Asia, the Middle East, Latin America, and Sub-Saharan Africa.

To set the context for this analysis, the next chapter presents IFC's own approach towards enhancing SME access to finance. More fundamentally, it seeks to present a "big picture" of what the proposed methodology is concretely trying to measure in terms of the core development outcome of job creation.

²⁷ It should be noted that the tracer survey data do not completely compensate for the shortcomings of the ES data. The tracer surveys cover informal firms (including micro enterprises) and firms that took a loan but could not repay it (resulting in partial data on surviving firms).

IFC'S SME FINANCE FOOTPRINT AND REACH

IN BRIEF

- IFC has a long-term SME portfolio of about \$11 billion, not including microenterprise lending.
- It has increased its client base over the past 12 years, growing its reach across all regions.
- IFC's portfolio growth has supported client financial institution outreach, with the total outstanding volume of SME loans from IFC clients' own portfolios growing from \$100 billion in 2009 to \$360 billion by the end of 2018.

Given that SMEs play an important role in job creation in emerging markets, IFC is working to alleviate the estimated \$4.5 trillion finance gap constraining SMEs in developing countries.

This chapter provides an overview of the profile of IFC's activities and data collection methods, which will serve as the basis for the extrapolation of job creation in the following chapter. Obtaining SME data requires significant resources. To illustrate how data typically collected by DFIs can be used, data on the loan portfolio of IFC clients collected annually through the "MSME Reach Survey" are used to extrapolate the number of jobs created by their financing activities.

IFC surveys its financial institution clients to understand the supply of finance to SMEs.²⁸ This annual Reach Survey²⁹ measures the outreach of IFC's clients to MSMEs.³⁰

The survey collects data on each financial institution's MSME loan portfolio, as well as on the deposit volume, channels, and demographic information of the financial institution's client base. The outreach of IFC's clients is measured by the total outstanding volume of SME loans—which grew from \$100 billion in 2009 to \$360 billion

IFC FOOTPRINT IN ALLEVIATING THE SME FINANCE GAP

- Operating, with clients/partners, in over 100 countries
- ± 8 million client loans to SMEs

by December 31, 2018 (Figure 2.1). These represent the aggregate SME lending portfolios of all of IFC's clients, referred to as "reach data."

During the same time period, IFC's Financial Institutions Group's SME finance investment portfolio grew 10-fold—from about \$1 billion in 2000, to \$11.1 billion in 2019 (Figure 2.2). IFC's own portfolio growth has played a part in enabling its clients' outreach to SMEs.³¹ Since 2010, IFC has been focusing on promoting access to financial

²⁸ MSME firm size definitions: IFC's Global Financial Markets division categorizes its clients' sub-borrowers as follows: (1) microfinance institution: if a loan is less than \$10,000 at origination; (2) small enterprise: if a loan is less than \$100,000 at origination; (3) medium enterprise: if a loan is less than \$1 million at origination (\$2 million for more advanced countries).

²⁹ See "IFC Financing to Micro, Small and Medium Enterprises—Reach Data" at <http://www.smefinanceforum.org/data-sites/ifc-financing-to-msme>

³⁰ These charts use data as of December 2018.

³¹ As will be noted in Chapter 3, the SME lending of IFC's clients cannot be solely attributed to IFC's own investment in those financial institutions. Money is fungible and it is difficult to trace funds from IFC directly to SMEs that borrow from the financial institution clients. Instead, the goal of IFC's financial and advisory support to its clients is to position them to better serve SMEs.

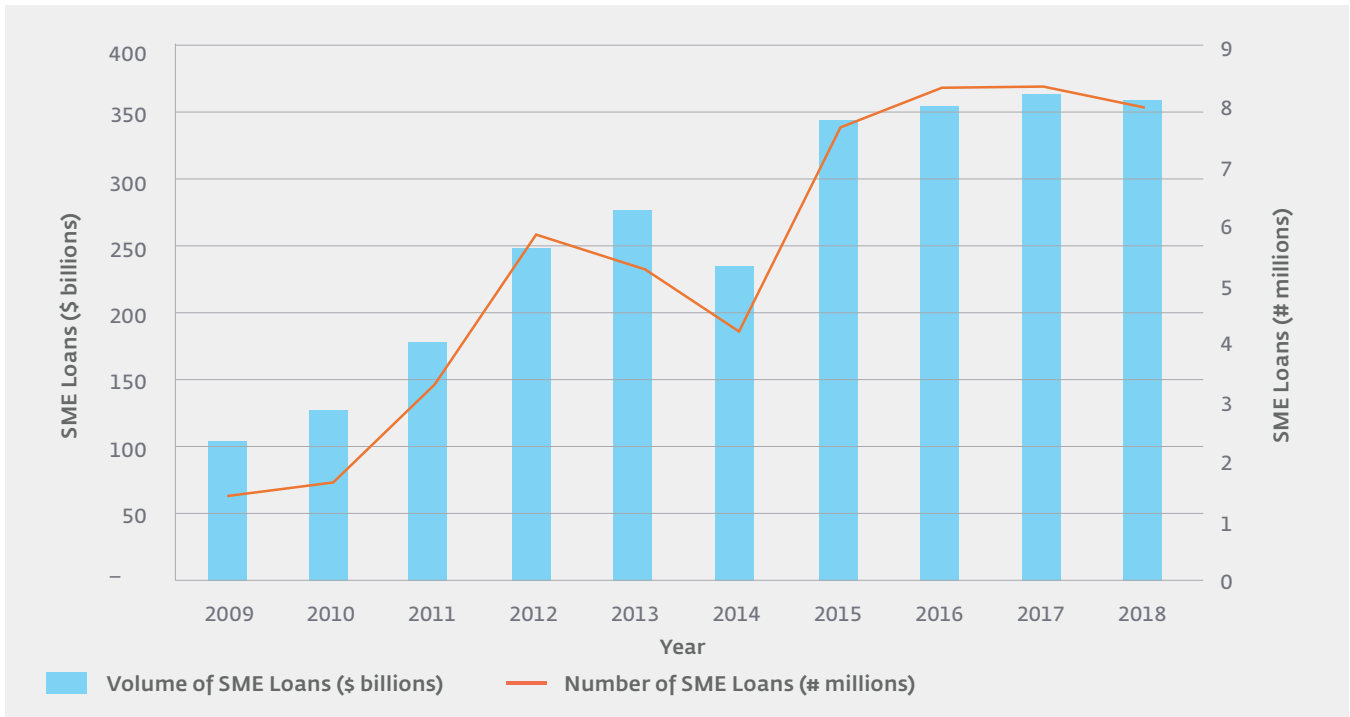


Figure 2.1: Overview of IFC's clients' global SME financing levels each calendar year, based on Reach Survey data ³²

Source: : Authors' calculations, based on IFC Reach Survey Data CY 2009–18.

services for female-owned SMEs through the Banking on Women business line. This business line's committed long-term portfolio was just over \$200 million in 2013,

and by March 2018 had steadily risen to \$1.7 billion, with a reach of about 340,000 loans to women-owned SMEs, amounting to \$11.4 billion.

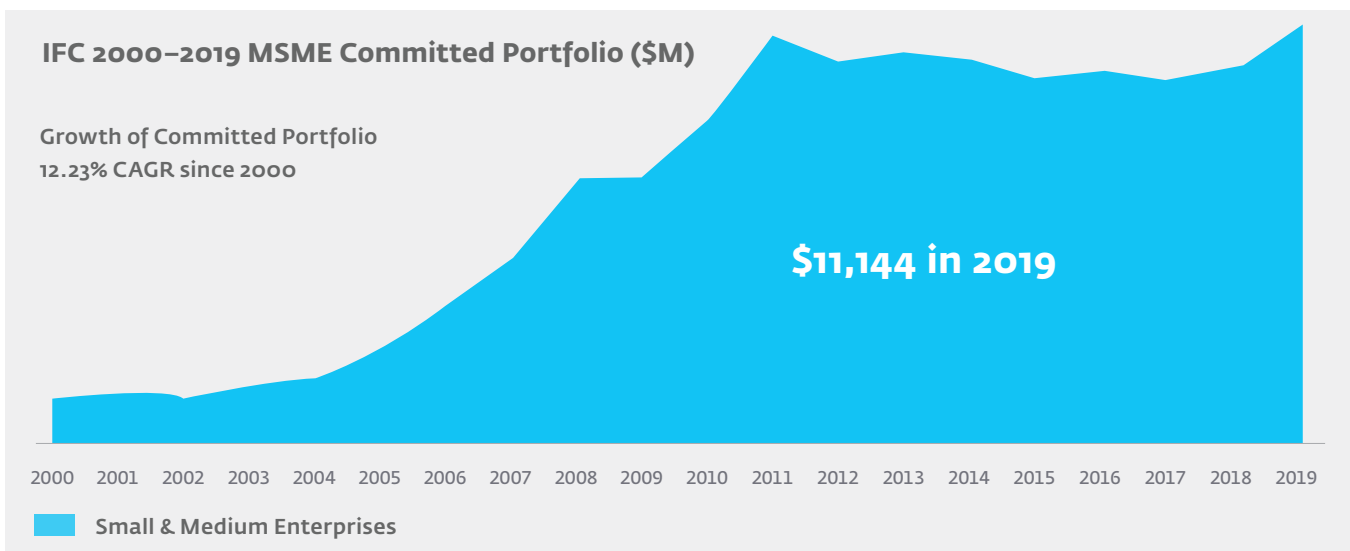


Figure 2.2: IFC's committed SME portfolio, FY2000–FY2019 (US\$, millions)

Source: : Authors' calculations, based on IFC Reach Survey Data FY 2000–19.

³² IFC's fiscal year (FY) starts in July and runs through the end of June. For example, FY20 began in July of calendar year (CY) 2019.

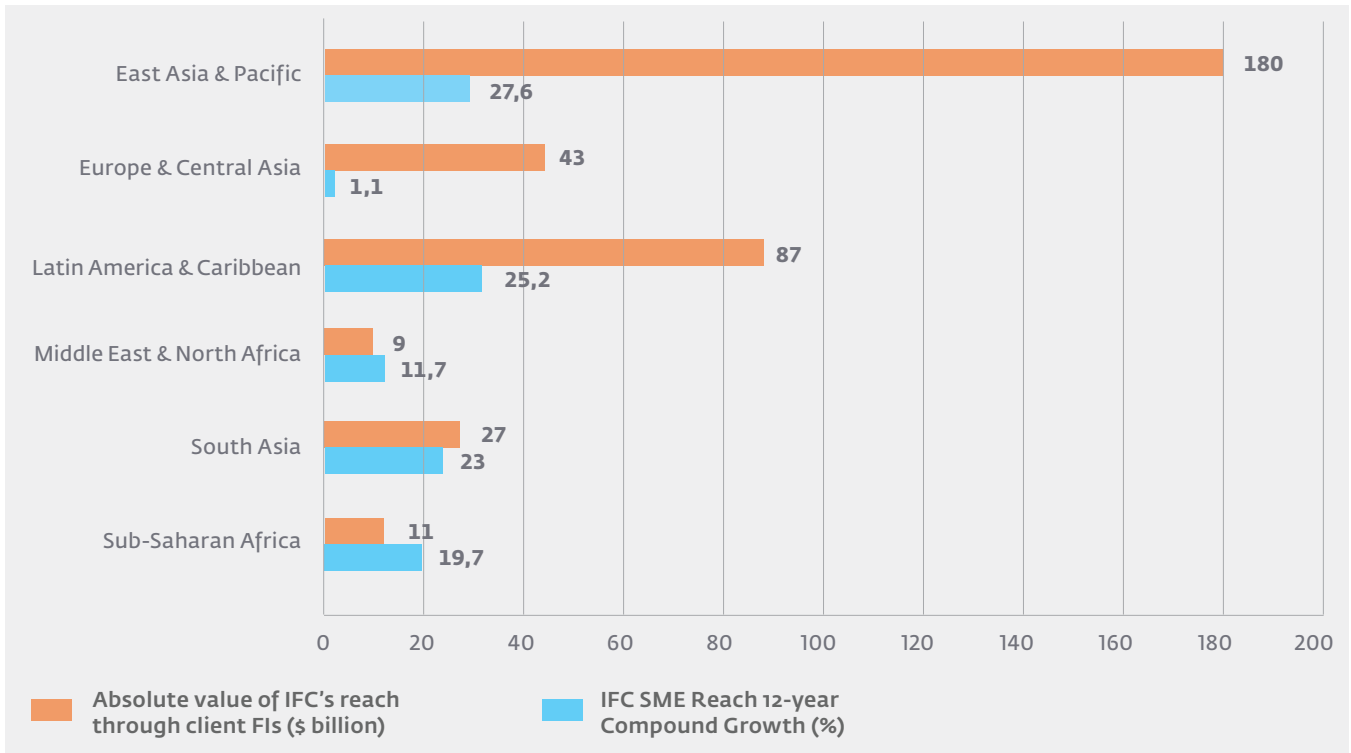


Figure 2.3: Total size in CY2019, and the 12-year compound growth rate for IFC's client financial institutions

Source: Authors' calculations, based on IFC Reach Survey Data CY 2007–18.

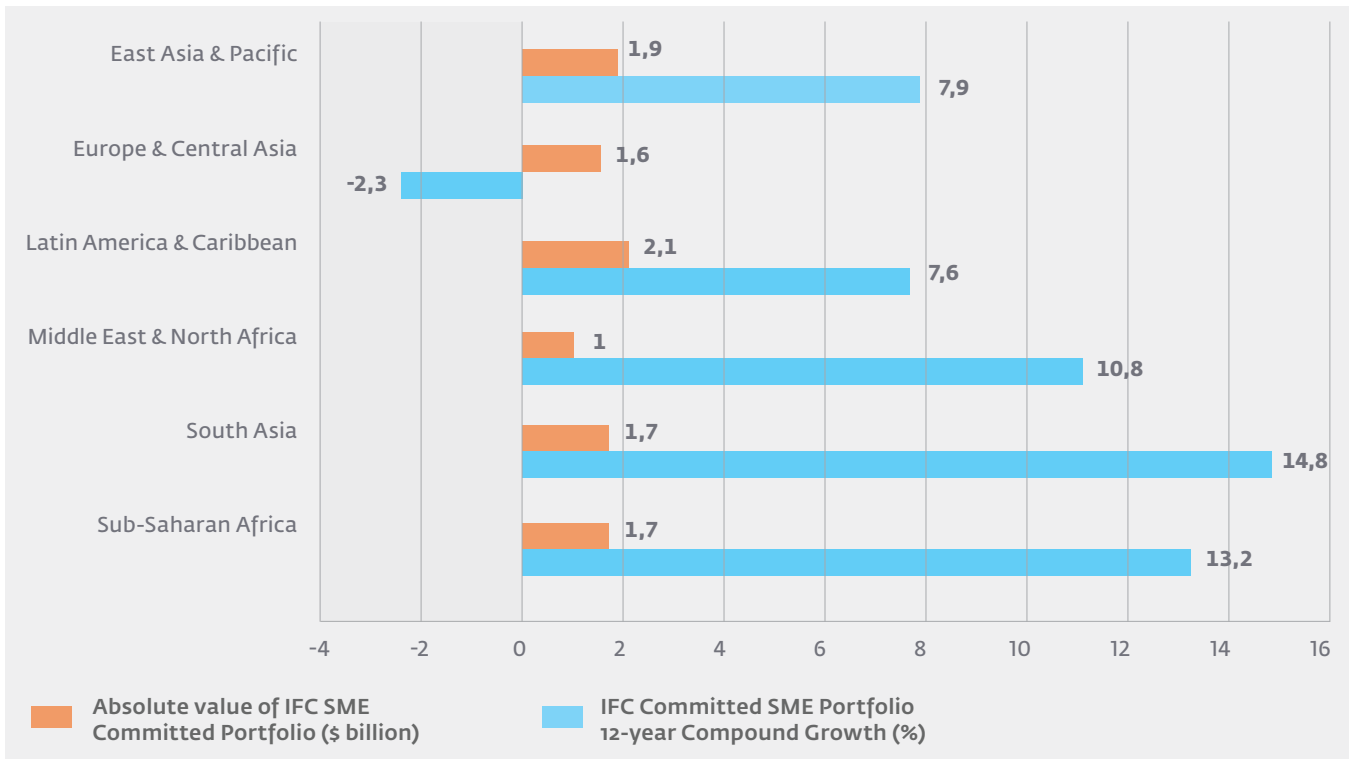


Figure 2.4: Total size in CY 2019 and 12-year compound growth rate for IFC's committed SME portfolio

Source: Authors' calculations, based on IFC Reach Survey Data CY 2007–18.

IFC has significantly increased its client base over the past 12 years, growing its reach across all regions, with East Asia and the Pacific, Latin America and the Caribbean, South Asia, and Sub-Saharan Africa all experiencing growth. In East Asia and the Pacific for example, in 2018 the 12-year compound growth rate of IFC clients' SME loans was 27.6 percent, while for Latin America and the Caribbean it was 25.2 percent (see Figure 2.3).

In 2018, long-term commitments from IFC's own account in support of financial intermediaries' SME-related activities continued to increase. For FY 2007–19, IFC's SME financing rose in all regions except for Europe and Central Asia, although the latter still accounts for a sizeable portion of IFC's overall committed SME portfolio (see Figure 2.4).

Notably, over the same period, both the Sub-Saharan Africa and South Asia regions saw an increase of 13.2 percent

and 14.8 percent respectively for IFC's committed SME portfolio. The 2008 financial crisis, which spread from high-income to low-income economies, negatively affected IFC's worldwide commitments. For example, long-term growth in SME financing in Europe and Central Asia slowed from 11.7 percent compound annual growth rate (CAGR) in 2007 to -2.3 percent in 2018. Longer term, however (2007 to 2018), financing quintupled in South Asia, and quadrupled in Sub-Saharan Africa. (For more details on IFC's SME reach, see Figure A1 in the Annex.)

Building on this high-level overview of the SME operations of IFC and its clients, the proposed methodology in the next chapter will measure the job creation and productivity effects of the clients' activities in SME finance. The hope is that the updated methodology will be useful for other DFIs and financial institutions to measure their own SME finance operations.



ESTIMATING THE CROSS-COUNTRY DEVELOPMENT EFFECTS OF SME FINANCE

IN BRIEF

- 40 million new formal jobs are needed in developing countries every year until 2030.
- Over two years, every million dollars loaned to SMEs in developing countries is associated with the creation of an average of 16.3 additional permanent jobs.
- Extrapolating the multiplier (16.3) to IFC clients' SME loan portfolios suggests that their lending was associated with the creation an estimated 4.7 million to 6.1 million jobs in 2018.

Introduction

As noted previously, in 2017, there were about 21 million SMEs in developing countries, 44 percent of which were financially constrained—with a total estimated finance gap of \$4.5 trillion (IFC 2017b). Because SMEs are crucial drivers of employment, addressing this gap should be part of global efforts to reduce poverty. Indeed, many institutions have already channeled considerable resources in this direction.

But the authors are equally interested in *measuring effectiveness*, which is why there is an emphasis on applying a methodology that can meaningfully measure the development outcomes of these efforts in terms of job creation.³³

It is important to note that this study is not intended to unequivocally move the econometric work on establishing the direction of causality from “access to finance” to “job creation”. This is a big issue in the literature, and it is something that is not easily overcome. Ayyagari et al. (2016)³⁴ tried to address the causality issue through instrumental variable analysis and other methods. In this report we build on the baseline regression of Ayyagari et al. and show correlations between job growth and access to finance (but not causality) across developing countries.³⁵

- The methodology applied here focuses on the measurement of job creation effects associated with access to finance for SMEs in developing countries.
- It does not assess causality, but instead highlights correlations between access to finance and job growth.
- This information can be used to extrapolate job effects from the outstanding loan balance of financial institutions.

³³ As far as the authors know, there have up to now been no such tools available.

³⁴ Ayyagari et al. (2016) investigates the effect of access to finance on job growth in 50,000 firms across 70 developing countries. Using the introduction of credit bureaus as an exogenous shock to the supply of credit, the paper finds that increased access to finance results in higher employment growth, especially among MSMEs. The results are robust to using firm fixed effects, industry measures of external finance dependence, and propensity score matching in a complementary panel data set of more than 4 million firms in 29 developing countries.

³⁵ The estimate of the baseline regression presented in this chapter can be thought of as an upper bound, otherwise known as a “naïve estimate” in the field of econometrics. Other unobservable variables such as managerial quality might drive both job growth and access to finance. Additionally, the causality might indeed run in the opposite direction, where firms that have higher growth potential are the ones that receive loans.

To supplement the simple correlation, the analysis presented in this chapter uses robustness checks such as the Heckman correction and propensity score matching (PSM) to see if addressing some aspects of the underlying issues such as selection bias would substantially change the estimate (see Annex A7 for more details on PSM). Since the estimates do not fluctuate very much, this raises confidence in the notion that correlations are not overestimating the role of access to financing (see Box 3.1 for more details).

In addition, the causal impact that the financing of SMEs has on their growth and job creation is not the only motivation for DFIs lending to SMEs through financial intermediaries. Since local financial institutions may tend to pick the better performing SMEs (i.e. those that are subsequently likely to develop a greater capacity to create jobs), DFIs rely on local institutions to assess and select their investees.

A correlation between access to finance and job growth may inherently include the positive selection bias of financial institutions providing financing to a growth-oriented pool of SMEs that may be disposed to hiring over other priorities.

As already signaled, this chapter's focus is on the regression framework it presents to analyze the

quantitative link between loan size and the resulting net job creation by SMEs. Likewise, as stated earlier, empirical analysis found that over two years, all things being equal, a million dollars in loans to SMEs in developing countries is associated with the creation of 16.3 additional permanent jobs, on average, when compared to firms with no access to financing.^{36,37} This “job creation multiplier” is robust to various specifications of the regression framework, including fixed effects³⁸ and the Heckman correction for selection bias.³⁹

Extrapolating this result to the SME loan portfolios of IFC's client financial institutions (as detailed in Chapter 2) suggests that, in 2018, the availability of financing through client lending activities was related to the creation of between 4.7 million and 6.1 million additional permanent jobs.

This chapter describes the data used for the regression analysis, followed by an outline of the regression methodology. The results and multipliers are then discussed. The chapter follows this with details of the extrapolation exercise that the authors used to estimate the number of jobs created through the SME loans that IFC's client financial institutions provided. The chapter concludes with a note on the global context.



³⁶ It should be noted that this is an observed correlation between loan and subsequent job growth after controlling for firm- and country-level variables. While we try to partially address the issue of sample selection, this paper does not draw any conclusion on causation. The research that this paper is based on (Ayyagari et al. 2016) delves into the issue of causation in more depth and can be reviewed for this. Although the regression framework from Ayyagari et al. (2016) is the basis of this paper, the authors are building on that analysis by adding tools such as the Heckman correction.

³⁷ On average, this is 8.15 additional permanent jobs per year over at least a two-year period. The methodology aims to primarily estimate the additional jobs created as a result of the financing, but also to provide a separate estimate for jobs that continue to be supported due to the availability of financing.

³⁸ A fixed effects model treats random variables as non-random (i.e. fixed)—holding as constant the average effects for a variable that may affect the outcome of the analysis.

³⁹ Selection bias occurs when the selection in a sample is not random, making it unrepresentative of the assessed population. This is the case with loan recipient-firms. The method to correct for this bias was introduced by James Heckman. For more detail see Heckman (1976).



Data

The authors used data from the World Bank’s Enterprise Survey (ES), which was conducted in over 100 countries, and primary data from IFC’s tracer surveys, which were conducted in over 10 countries, to review the SMEs receiving loans from IFC’s financial institution clients.

The data used for this exercise were all sourced from World Bank databases and are comparable across countries because they are all focused on formally registered firms. The tracer survey data for different countries were collected in a standardized way, and the key variables were similar to those in the ES.⁴⁰ Firm-level data on the size of the loans taken by SMEs, employment, and other firm characteristics (such as age of the firm, ownership, sector, and purpose of the loan), as well as country-level macroeconomic variables (such as GDP

and inflation),⁴¹ were used together to analyze the link between the volume of loans taken by SMEs and changes in employment in the SMEs themselves. Country-level macroeconomic variables such as exchange rate, GDP growth rate, and inflation rate⁴² were obtained from the World Bank’s World Development Indicators. Data were also obtained on the indicators of a country’s financial regulatory quality, and from the “Getting Credit” and “Enforcing Contract” indices of the World Bank’s Doing Business database.

The ES uses a common questionnaire and a uniform sampling methodology to produce survey data on firms in the manufacturing, service, and other sectors that can be compared across countries.⁴³ It also uses a stratified random sampling methodology⁴⁴ to generate a sample large enough to be representative of the non-agricultural formal private economy, as well as key sector and firm size

⁴⁰ Although IFC has conducted tracer surveys since 2011, it took time for a standardized approach to emerge. Several tracer surveys from early on were customized to fit local needs, resulting in different outputs. As a result, the cases presented in this report will vary slightly in terms of what they show since they were customized. For example, the AU Financiers study tracked transport finance to small road transport operators, which was unique to that client.

⁴¹ The analysis includes country / region fixed effects, although financial sector characteristics are not available. However, they are most likely the same within a country (year). Thus, the country dummy would account for this, as well as for other country-specific characteristics that do not vary in time.

⁴² The World Development Indicators are the official exchange rate (local currency unit) per \$, period average, GDP growth (annual %), and inflation—the GDP deflator (annual %).

⁴³ The ES covers the vast majority of developing countries, including fragile states such as Afghanistan, the Democratic Republic of Congo, Iraq, and South Sudan—all of which are included in this analysis.

⁴⁴ Stratification of the sample is based on three criteria—sector, firm size (employees), and geographic location.

classifications. This dataset provides firm-level information on employment levels at the time of the survey (hereafter referred to as the “current year”), as well as employment levels in two to three previous fiscal years⁴⁵ (hereafter referred to as the “baseline year”).



The weighted mean and median numbers of permanent employees were 25.55 and 11.0 respectively.⁴⁸ The use of estimations in these two datasets aids the analysis because of the complementary nature of the datasets. The ES provides more comprehensive coverage across developing countries, while the random survey sample is nationally representative.⁴⁹ The ES also provides rich data on firms without loans, which is essential for comparison with a control group.

On firms’ finances, the ES collects data on whether a business currently has the following: access to a loan, overdraft protection, a line of credit, and a deposit account. When the firm has an outstanding loan, details on the size of the loan and origination year were ascertained. Due to the nature of the empirical analysis, only firms with loans originating in the baseline year were retained in the estimation sample.⁴⁶ All enterprises that lacked access to financing through a loan were kept in the sample to serve as the counterfactual, enabling a comparison between the job creation effects of firms that were able to get a loan and firms that did not have access to finance.

The IFC datasets allow for a much broader sample of SMEs with loans than is provided by the ES alone.⁵⁰ The tracer survey also complements the ES by providing data on both rural and very small enterprises, as well as those that become non-performing over the course of the loan period. However, the use of two separate datasets does raise an issue regarding standardizing variables across the various sources of data. The authors have addressed this by only using variables that match. (For more details of the sample, including descriptive statistics, see Table A1 in the Annex.)

The surveys were conducted from 2006 to 2015 and cover a total of 129 developing countries.⁴⁷

Since the analysis was restricted to SMEs, outliers were removed from the sample by filtering for firm size according to two criteria. For firms with a loan, IFC’s loan size proxy classification was applied to limit the firms identified as SMEs to those that obtained a loan ranging from \$10,000

The pooled dataset from the ES and IFC’s internal sources contains information on 50,257 firms operating in 129 developing countries, in which 1,755 of the firms received a loan and the remaining 48,502 were without a loan.

IFC SME DEFINITION		SME LOAN SIZE PROXY
Indicator	Number of Employees	Loan Size at Origination
Small Enterprise	10–49	<\$100,000
Medium Enterprise	50–300	<\$1,000,000

Table 3.1: IFC’s Definitions of SMEs

⁴⁵ About 15 percent of the ES details employment levels over a period of three fiscal years, while the remaining collect recall employment data for two previous years.

⁴⁶ The ES also collects panel data for some countries by re-surveying the same firms over time. However, for the purpose of this estimation, the sample was too small, and thus this avenue of analysis, while potentially more promising, was not pursued.

⁴⁷ With time effects including year and country or region.

⁴⁸ The unweighted mean and median were 37.21 and 15.0 employees respectively.

⁴⁹ The ES also collects panel data on a small subset of firms and countries. These data were not used because the sample was too small.

⁵⁰ About 70 percent of the overall data on SMEs with loans comes from the ES, while the rest comes from IFC datasets.

to \$1 million.⁵¹ For firms without a loan, the sample was restricted to SMEs with between 10 and 250 employees.⁵²

The second source of firm-level data comes from IFC’s own evaluation efforts using tracer surveys. IFC has collected data on the SME beneficiaries of some of its client financial institutions through expanded appraisals/supervision and micro case studies.

IFC expanded appraisals examine loan files and review financial institution management information system data to understand the characteristics of financial institutions’ SME borrowers at the time of loan origination, in areas such as sector, employees, sales, and assets. In some cases, this is followed by Expanded Supervision, which allows IFC to gather data on changes in the number of employees, sales volumes, and assets that follow upon the provision of a loan.

IFC uses the SME tracer surveys to acquire information on SME borrowers when data are not available in financial institution clients’ management information system or loan files. This includes a face-to-face interview related to the profile of the SME, and questions about the SME’s financial situation at the time of loan origination, as well as two years later.⁵³ Questions also cover the SME’s use of banking products, its expansion plans, and its evolution into other banking relationships. The compiled dataset is similar to the ES data for SMEs with loans, but has limited coverage. (See Table A1 in the Annex for more details.)⁵⁴

The use of SME tracer surveys helped the authors address some of the limitations of the ES, as the tracer surveys can provide data for both rural SMEs and very small enterprises (both of which are largely excluded from the ES). However, like the ES, tracer surveys focus on formally registered firms.

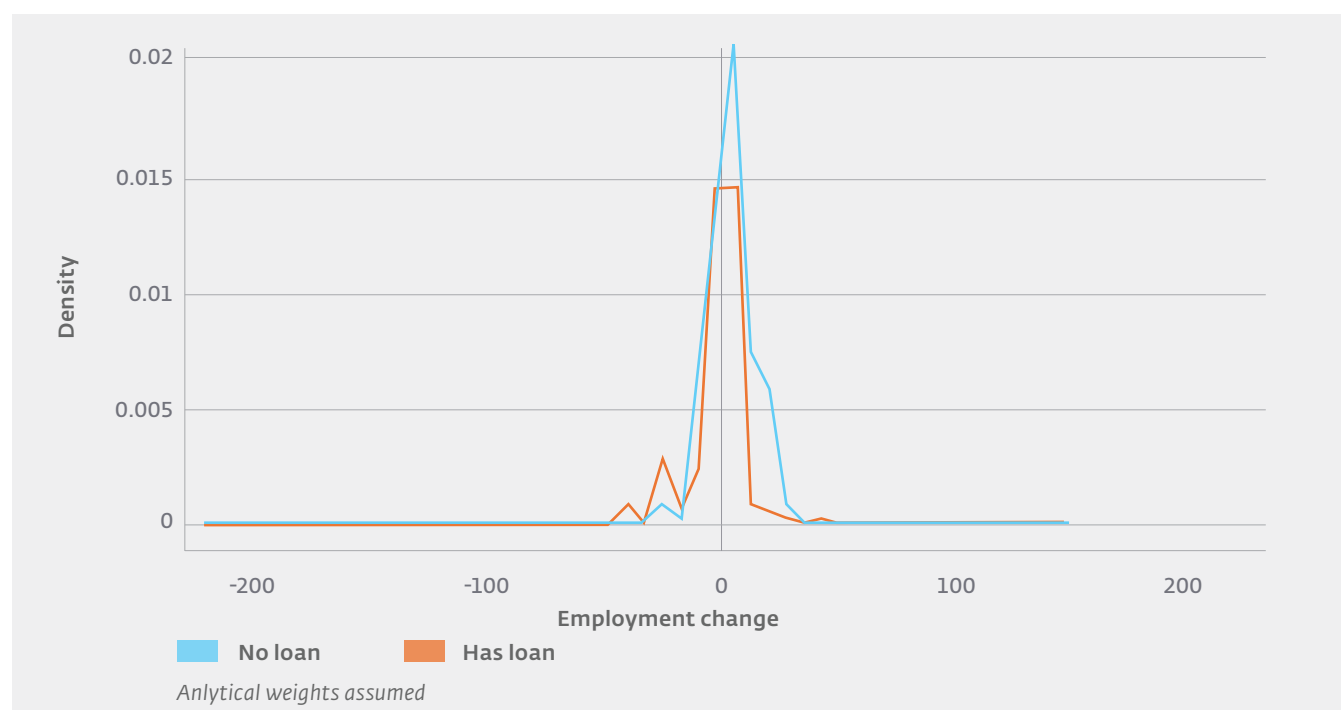


Figure 3.1: Employment change, density estimation⁵⁵

Source: Authors’ calculation, based on Enterprise Survey data.

⁵¹ For some countries, the upper bound for IFC’s loan size proxy definition stands at \$2 million, and this is reflected in the countries’ sample restriction. For more information on IFC’s loan size proxy, see IFC’s 2010 Brief on MSME Country Indicators.

⁵² This distinction in SME identification for those with loans and those without loans was necessary because the IFC data already apply the IFC loan-size proxy definition. To confirm that this distinction was not driving the results, the analysis was repeated by using the total number of employees for both the groups, even if this meant limiting use of the IFC datasets. However, this does not drive the underlying results.

⁵³ While most surveys were done with a separate baseline and endline, some were done only at the endline, and were associated with recall questions pertaining to the baseline.

⁵⁴ Although the survey was carried out in-house by IFC, the exercise has only been conducted in 10 countries. However, over time, IFC expects to increase the number of countries examined.

⁵⁵ This figure illustrates the weighted kernel density estimation of employment change by firms with and without a loan. The distribution of establishments with a loan is skewed to the right, with a fatter tail on the positive employment change side. This implies that more firms with loans create jobs than those without loans.

The results of this study therefore do not apply to informal enterprises. While our dataset (comprising the ES and IFC’s tracer surveys) is not ideal, it is a reasonably efficient source of data for estimating the effect of financing on SMEs.

Several of the main variables are constructed using the datasets discussed above. The dependent variable, **employment change**, is calculated as the annual change in the number of permanent employees over the two time periods.⁵⁶ To diminish the effect of outliers, firms with more than 250 employees,⁵⁷ and firms at the top and bottom one percentile of job growth, are removed from the analysis. The primary variable of interest to this analysis, loan size (provided in local currency in the ES), is converted to U.S. dollars, using the loan origination year’s nominal exchange rate. The size of the firm is proxied by the natural logarithm of annual sales in the baseline year to reduce the influence of outliers. In addition, the age of the firm is also converted to a logarithmic scale for a cleaner regression analysis.⁵⁸

Table A1 in the Annex presents summary statistics for the firm variables in the regression sample. In total, the average number of permanent employees in the sample of firms is 25 (weighted), and there is an overall average annual net job creation of 1.03 (weighted) employees over the years in the sample. Firms with a loan experienced an annual increase in employment levels of 2.85 (weighted) over two to three years from the baseline to the current year. Of the firms in the sample, 43 percent (weighted) were in the manufacturing sector, while 50 percent (weighted) were in services.⁵⁹ Furthermore, on average, the SMEs have been in business for about 15 years (weighted), while 39 percent (weighted) are woman-owned.⁶⁰

Finally, in the baseline year, countries in the sample experienced an average inflation rate of 9 percent, and real GDP growth of 4.9 percent.



⁵⁶ As discussed earlier, the time interval between the baseline and endline employment observations is two or three years, depending on the survey. As a result, this employment change variable measures job creation by surviving firms, but does not include job creation by new entrants. The tracer survey also includes job destruction by firms that died within two years of receiving a loan. There are, however, very few such firms. “Permanent Employees” are defined as full-time, permanent employees working in the enterprise in the past fiscal year. For more information, please see the link: <http://www.enterprisesurveys.org/employment-indicators>

⁵⁷ There is a significant variation in the definition of SME size categories that often relies on a combination of employees, assets, and revenues. Even for a categorization based on the number of employees, there is substantial variation in definitions across countries. This study defines SMEs as those with less than 250 employees. This is the most widely used definition in SME publications and, according to research by IFC’s MSME Country Indicators (2019), the most widely used definition by individual countries.

⁵⁸ Loan size is not in logs because doing so would block the ability to obtain the output for the number of jobs created.

⁵⁹ “Construction and retail” is the third reference group and accounts for the rest of the firms (by sector) in the sample. The agriculture sector is excluded, and the results presented in this paper do not reflect the effects of access to finance on agriculture SMEs.

⁶⁰ As defined by the ES definition of women holding any ownership stake.

Box 3.1:

A NOTE ON ENDOGENEITY AND METHODOLOGY SELECTION



This study serves as a starting point to give direction for future work and calls for the collection of better data to refine the understanding of how financing affects SME outcomes. Given the complexity of the issue, the report aims to tackle it from all possible angles, considering the quality and availability of data. Most studies face similar econometric issues, and deal with them by starting with ordinary least squares estimation, then including additional models to address the issues that affect ordinary least squares, and finally comparing the estimates. The authors of this report have followed a similar process, starting with ordinary least squares estimation, exploring the effects of sample changes, attempting to account for self-selection, employing quantile regressions, and using other methods such as propensity score matching. All of these methods will provide potentially biased (upward) results, or an upper limit if the effect is there.

We acknowledge the endogenous nature of access to finance. To mitigate the problems that can arise from this, we control for the following:

- sector
- initial and current size of firm (by assets)
- age of firm
- region
- country characteristics



In general, controlling for more firm-level differences (besides exporter status, foreign, and government) is not possible given the data source. For example, the kinds of SMEs that IFC interviewed generally do not have the size and structure necessary to attract foreign direct investment, there are no estimates of costs, and reporting on profits may not be reliable.

We have tried to handle the data limitations to the greatest extent possible and have checked for robustness—for example, by assessing the extent to which some controls on sample selection may invalidate results. The choice of instruments for the Heckman correction (“Heckit”) is not ideal (driven by what is available), but the aim is to provide suggestive confirmation of the baseline correlations.

Other methodologies such as propensity score matching were considered, but ultimately deemed impossible due to the structure of the data. Specifically, there is not enough information on how banks select firms (even in the wider literature), while financial data in the ES are sparse. Even when SME markets are more developed, variables that cannot be controlled due to a lack of data (known as unobservables) that are outside of financial data may drive loan selection (such as relationship lending). As such, the propensity score matching approach would still suffer from the same issue of selection based on unobservables that matching would not overcome. The authors feel that the Heckman method provides a sufficient robustness check. This is discussed in more detail later in the report.

Regression methodology and results

Various authors have used a natural experiment to test the effects of improved access to finance after crises or changes in regulations (banking regulations, collateral regulations, and others). These authors include Guiso et al. (2004a, 2004b), Benmelech et al. (2011), Greenstone et al. (2012), Chodorow-Reich (2014a, 2014b), Bertrand et al. (2007), Duygan-Bump et al. (2013), and Campello and Larrain (2015).

Another approach uses the strategy developed by Rajan and Zingales (1998), which assumed that firms have a “natural” need for external financing, depending on their sector (i.e. large, capital-intensive firms versus small start-ups).⁶¹ The authors using this strategy include Ayyagari et al. (2016), Pagano and Pica (2012), Cull and Xu (2011), Bertrand et al. (2007), and Duygan-Bump et al. (2013). The empirical methods used in these papers are either difference-in-difference estimation or instrumental variables estimation.⁶² In this report, a similar methodological approach has been used.

The regression methodology we employ was derived from the framework suggested by Ayyagari et al. (2016). Part of the intent of that paper—including its data coverage and scope—was similar to what this report aims to achieve. However, the methodology employed here deviates from that paper in a few significant ways.⁶³ The intent of Ayyagari and co-authors was to extract a *causal relationship* between access to finance and job growth. So, in addition to a baseline regression of access to a loan on job growth, Ayyagari et al. ran a gamut of regressions intended to address the *direction of causality*.

This report differs from Ayyagari et al. (2016) in three main ways:

- It focuses not only on the job creation impact of having access to a loan, but also on the *intensive margin* of the impact of loan amounts on job creation. As a result, loan size is the regressor of interest in this report, rather than just loan access.⁶⁴
- The framework presented below introduces additional controls to serve as robustness checks.
- It uses the Heckman two-step correction⁶⁵ to deal with selection bias (see Box 3.1 for more details).

The baseline regression is a firm-level regression of annual employment change on loan size, as specified in Equation 1 below:

$$\text{Employment change}_{i,j,t} = \alpha \text{Loan size}_{i,j,t} + \beta X_{i,j,t} + \gamma Z_{j,t} + F_j + Y_t + \eta_{i,j,t}$$

Where i identifies firms, j country, and t baseline year. *Employment change* refers to the average annual change in employment from the baseline to the current year. *Loan size* is the size of the loan obtained by the SME in U.S. dollars. X is a matrix of firm-level characteristics such as size,⁶⁶ age, and female ownership status.⁶⁷ Z captures country-level variables that can affect employment changes such as inflation and GDP growth. F represents country or region fixed effects, while Y represents year fixed effects.⁶⁸

The regressions are estimated using ordinary least squares, with standard errors clustered at the country-year level or region level respectively.

⁶¹ The “natural” need for external financing is that which arises due to the specific business needs or operations of an SME. For example, a microenterprise might need less external capital to scale up than a medium-sized manufacturing firm that needs new facilities/equipment.

⁶² Difference-in-difference estimation refers to the statistical technique that studies the effect of a treatment on a treatment group, in contrast to a control group that does not experience the treatment. Instrumental variables estimation measures causal relationships when controlled experiments are not feasible, or when a treatment is not successfully delivered to every unit in a randomized experiment.

⁶³ The methodology here also builds on initial work undertaken for the United Kingdom’s Department for International Development-funded IFC SME Facility (in March 2015).

⁶⁴ This is not to say that only loan volume matters, but it is still worth investigating in the context of questions about how far DFIs or other lenders should go in supporting SME finance. Other areas, such as loan quality or purpose, could be promising areas for future research.

⁶⁵ The Heckman correction, or Heckit, is a two-step estimator aimed at correcting selection bias due to non-random assignment to treatment and control groups. In the case at hand, sample selection issues are important due to the inherent selection process involved when SMEs obtain a loan.

⁶⁶ Firm size is proxied by the log of sales, following Ayyagari et al. (2016). However, changing the specification to proxy size with the log of employees does not change the qualitative results for all the regressions (available on request).

⁶⁷ Exporting status and ownership of the firms (e.g. domestic, foreign, government) were controlled for in estimations but not reported in the final tables because the estimated coefficients marginally change.

⁶⁸ When possible, the right-hand side variables are lagged, and are measured before the loan is disbursed. In particular, the variable of interest, loan size, is appropriately timed so that the job growth is measured after disbursement of the loan.

The authors regress Equation 1 using various specifications, all producing statistically significant and consistent point estimates. The baseline regression results suggest that *every million dollars in loans from financial institutions to SMEs is associated with the creation of 16.3 additional permanent jobs over two years*—as distinct from firms without access to financing. This use of the country-year fixed effects model is closest to the model cited by Ayyagari et al. (2016). The estimates capture the within-country-year relationship between loan size and job creation. The estimated job creation multiplier is robust to the various additional specifications. We conducted unweighted estimations, used survey weights for weighted estimations, and restricted the sample to remove the undue effect of outliers. We also

carried out additional analysis to correct for sample selection bias through the Heckman two-step estimator—providing evidence suggesting that the direction of causality likely runs from financing to job creation (see Box 3.4).⁶⁹

Figure 3.2 summarizes estimates of the numbers of additional permanent jobs created per year from \$1 million in loans, compared with firms with no access to financing (see regression details in the Annex).

On average, for SMEs in developing countries, \$1 million in loans is associated with the creation of up to 8.15 additional permanent jobs per year, when compared to the control group without financing.⁷⁰

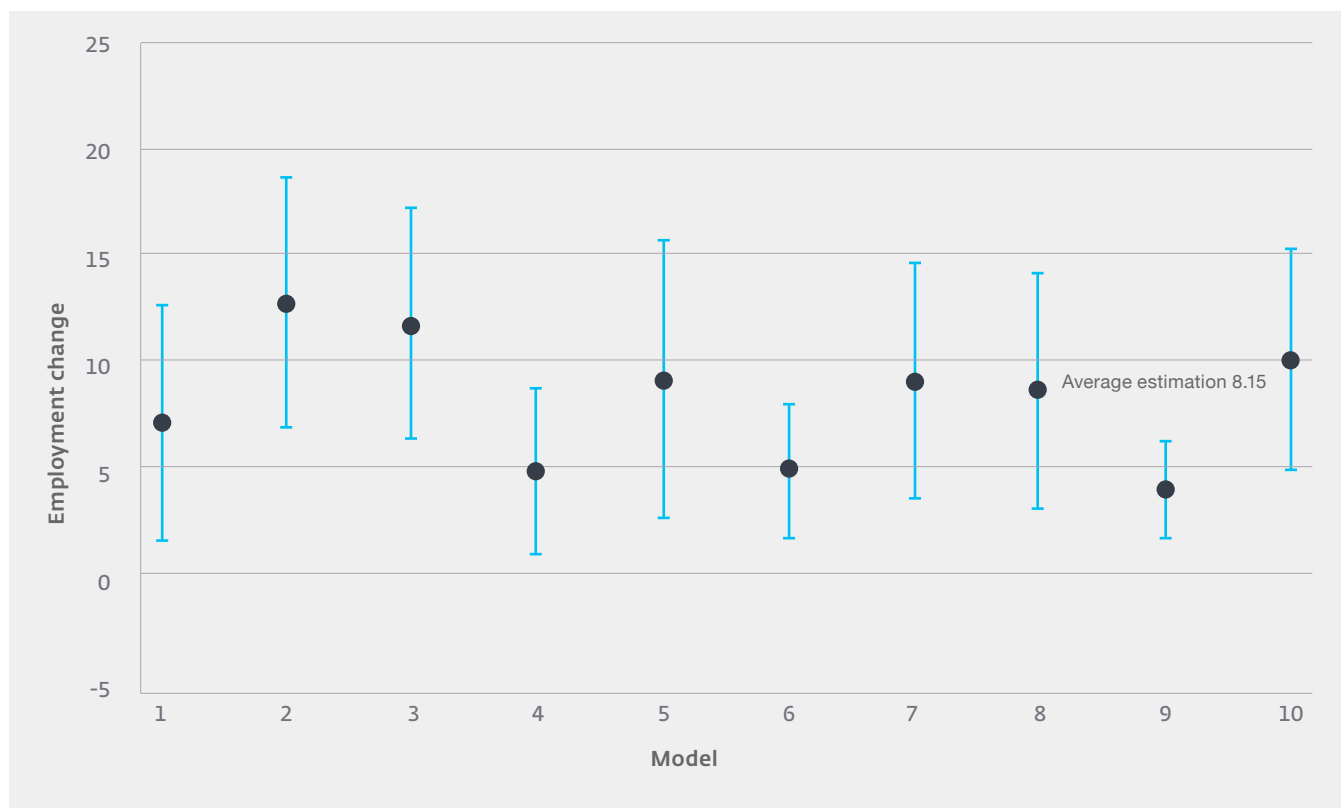


Figure 3.2: Estimated coefficients on annual employment change⁷¹

Source: Authors' calculation, based on Enterprise Survey data.

⁶⁹ Intuitively, the overall sample of firms represents a distribution of loan size that is zero-inflated and is right-skewed. As the selection of SMEs to receive a loan is based on firms' attributes, credit worthiness, and bankability, a Heckman two-step estimation technique (Heckman 1976) can implicitly model these factors to reduce the selection bias. The Heckman two-step estimator consists of a first step that runs a Probit model of the dummy variables of access to a loan on firm-level predictors. Data availability essentially dictates the selection of regressors for this first step. Sector dummies, firm age, sales, whether the SME has an existing relationship (through deposit accounts), and investment spending are used. The inverse mills ratio as part of the first stage is estimated to correct for sample selection bias and is used to run the second stage—the desired regression model (see the equation).

⁷⁰ This result (8.15 jobs) is the average of all regression models. It includes the base regressions and the Heckman estimation of the baseline regression, where the first step estimates the likelihood of loan access, instrumented by the level of investment and bank account availability; 8.15 is the average of coefficients for the total loans variable (regressions 1 through 10) – see Box 3.1.

⁷¹ See Table A2 in the Annex for the regression output.

Box 3.2:

UNDERSTANDING THE ESTIMATED COEFFICIENTS ON EMPLOYMENT CHANGE



Explanatory note on Figure 3.2:

8.15 is the average of coefficients for the *total loans* variable (regressions 1 through 10)

- 1 – Baseline model, no restrictions on the sample
- 2 – Baseline model with weights
- 3 – Baseline model with weights, using sales quartiles instead of the level of sales
- 4 – Estimation with sample restrictions, unweighted:
 - The dependent variable—change in employment—is limited to +/-249 employees
 - Sample of firms is restricted to SMEs—establishments with 10 to 249 employees
- 5 – Estimation with sample restrictions, weighted:
 - The dependent variable—change in employment—is limited to +/-249 employees
 - Sample of firms is restricted to SMEs—establishments with 10 to 249 employees
- 6 – Estimation with sample restrictions, unweighted:
 - The dependent variable—change in employment—is limited to +/-249 employees
- 7 – Estimation with sample restrictions, weighted:
 - Sample of firms is restricted to SMEs—establishments with 10 to 249 employees
 - Clustering of Standard Errors is at the country-year level, instead of region-year
- 8 – Heckman estimation of the baseline regression, where the first step estimates the likelihood of loan access, instrumented by the level of investment and bank account availability

This estimate is in line with two previous attempts at estimating a jobs multiplier. Brown and Earle (2013) used data from the U.S. Small Business Administration loan program and estimated the creation of 5.4 jobs per million dollars in loan value.

In another paper using more comprehensive data and different methods, Brown and Earle (2015) found the multiplier to be between three and four jobs per million dollars in loans. Research by the Centre for Economics and Business Research (2016), which used United Kingdom SME loan data, found a similar multiplier. There are various possible reasons why the multiplier is higher in this study: compared to the SMEs studied in developed

economies, the firms in developing countries might be more labor-intensive. Alternatively, the cross-country focus of this paper that covers many jurisdictions might also explain the differential with the U.S. or U.K. studies. Furthermore, these multipliers are more conservative than those from recent models,⁷² and they pass the sensitivity test relative to the country's total job creation figures from ILO data (outlined in the section below on implications for DFIs).

Further research may be required to develop more granular country and sector-level multipliers but, as far as the authors know, this is the first cross-country study attempting to quantify the job creation multiplier for financing to SMEs in the setting of developing economies.

⁷² Such as input-output and SAM models.

Investigating variations in the effect on job creation

Further analysis identified two relevant observations consistent with findings in the literature: (i) there is evidence that overall job creation is driven by a smaller group of high performing firms (“gazelles”), and (ii) in relative terms, smaller firms create more jobs from financing than larger firms.

To investigate the former, the authors estimate Equation 1

as a quantile regression on employment change per year. The results of the median sample provide a further robustness check for the fixed effects regression presented above. However, job creation among the 75th percentile of SMEs is more than twice that of the median (Figure 3.3). This is in line with established evidence of the gazelle effect, where average growth is typically driven by a smaller subset of high growth firms at the top of the distribution (Birch, 1987). This result demonstrates that the gazelle effect is an important driver for job creation from financing.

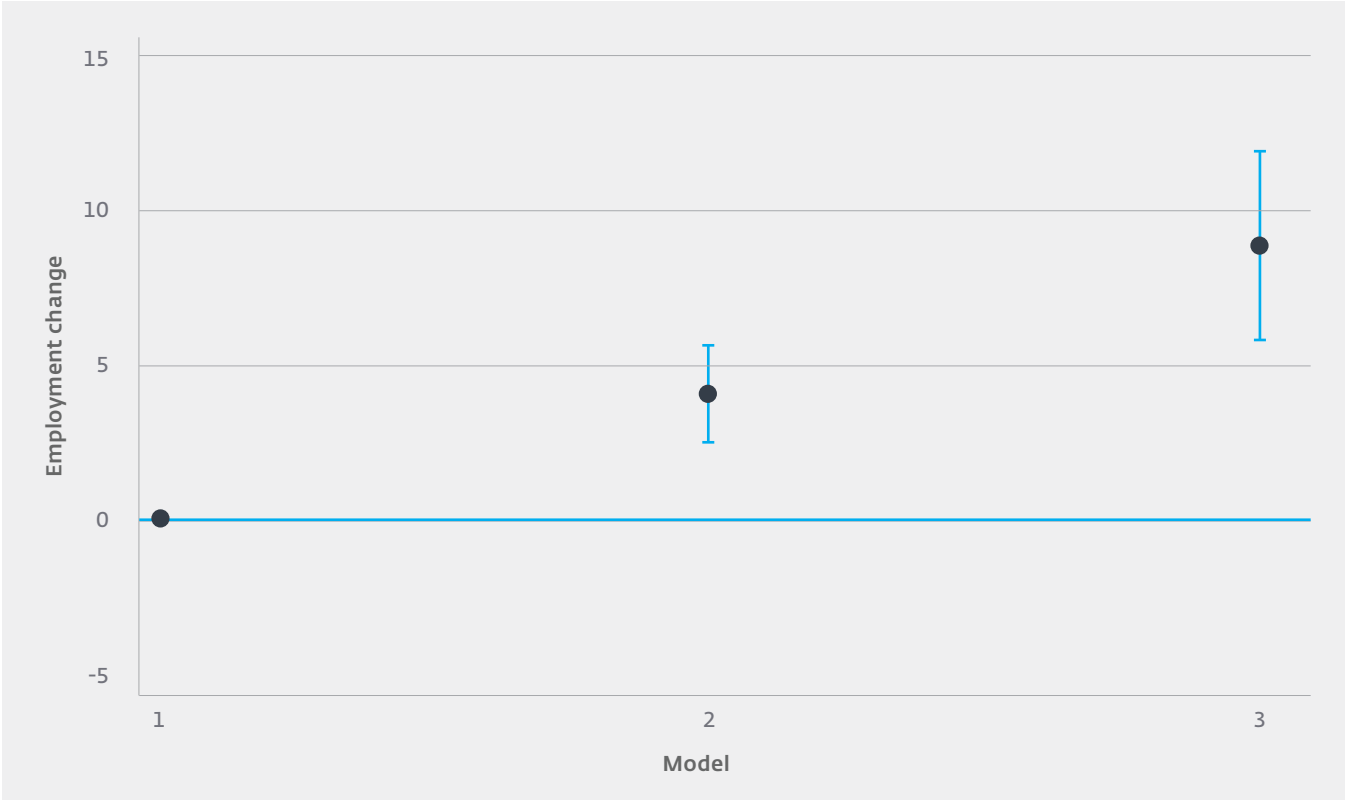


Figure 3.3: Estimated coefficients on employment change ⁷³

Source: Authors’ calculation, based on Enterprise Survey data.

For the latter observation that smaller firms create more jobs from financing than larger firms, the authors carried out sub-sample regression by size and expressed the changes relative to the baseline employment size. The regression estimates suggest that job creation gets progressively

smaller as the size category moves from small to medium firms (Figure 3.4). This is also in line with evidence in the literature that the credit constraint is more severe for small firms, and the removal of this binding constraint results in more job creation (for example, see Ayyagari et al. 2016).

⁷³ Simultaneous-quantile regression where each number represents a different quantile: 1 – 0.25 quartile; 2 – 0.5 quartile; 3 – 0.75 quartile. NS is not significant. For more details, see Table A3 in the Annex.

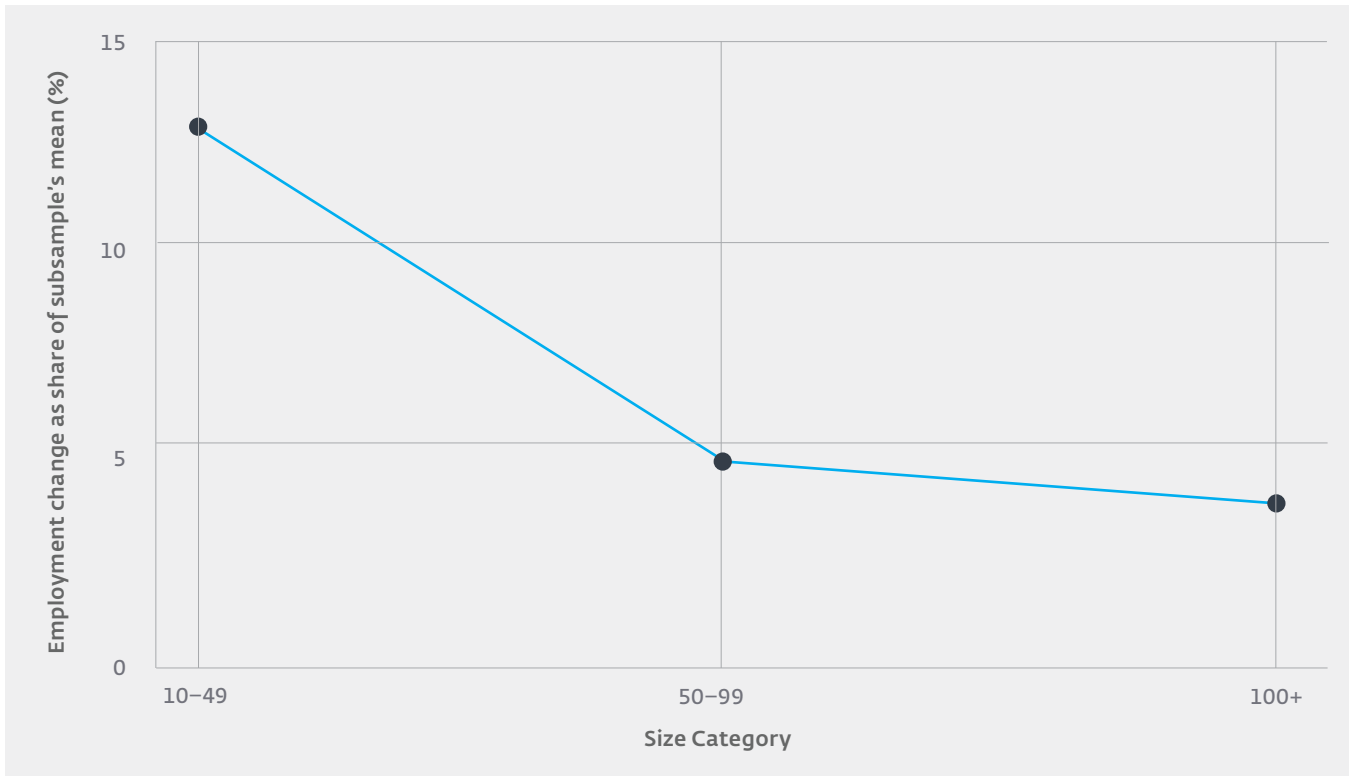


Figure 3.4: Employment change coefficient subsample

Source: Authors' calculation, based on Enterprise Survey data.⁷⁴



⁷⁴ Baseline estimation unweighted on different subsamples based on size. The estimated coefficients are then normalized by each of their samples' average.

Box 3.3: CORRELATION OR CAUSATION?

While Equation 1 highlights the correlation between loan size and job creation, it does not provide a definite causal relationship. In fact, at the heart of the issue of identification is the non-random nature of firms that are selected by financial institutions to receive financing. SMEs that obtain a loan are inherently different from the SMEs that do not. This is problematic because it is difficult to measure SMEs' anticipated growth opportunities. The SMEs that expect to expand because they have good growth opportunities would be more likely to obtain the loan. In other words, firms that expect to grow would also apply for a loan, and there are problems related to reverse causality. So, the change in jobs will not be due solely to the loan, but to the fact that the firm expected to grow (or saw the potential for growth).

If firm employment growth was primarily driven by a small number of industries that experienced rapid growth for reasons unrelated to credit—and demanded more loans as a result—another useful robustness check would be to control for industry trends. Equation 1 is estimated with sector \times year fixed effects. Assuming that growth is industry-driven, this helps tackle reverse causality concerns, because it addresses the possibility that employment effects are in fact driving the demand for credit.

Problems of omitted variable bias at the country level are partially alleviated by the estimation of Equation 1 using country-year fixed effects. However, the problems due to sample selection are much harder to address, as is evident by the lack of literature on the issue. This section offers a simple Heckman correction as a procedure to show that, though these estimates are to be taken as purely correlational, this is suggestive of an

effect from loans to job creation.

This proposed Heckman procedure still does not fully address the issue of selection bias. To explicitly address it, one needs to have a good proxy for growth opportunities in order to identify the firms that were selected for loans. Such a proxy is not available in the current dataset. Two proposed candidate variables are:

1. A dummy variable for whether the SME already has an existing relationship with a bank through a deposit account. (All SMEs with a loan satisfy this condition, while for those without a loan, a deposit account is indicative of financial inclusion and potential future access.)
2. Investment in the previous year is an indication of lump-sum purchases that might require financing.

However, both these variables are measured as of a year before the survey, and not in the baseline year. Therefore, although the inclusion of the variables makes conceptual sense, the timing of measurement is not ideal.

The Heckman correction addresses one aspect of the bias from endogeneity, namely, sample selection. There might be other sources of endogeneity, such as the effect of factors that make firms attractive both as candidates for a loan and as potential drivers of job growth.

To the extent that these selection biases are not captured by the Heckman correction, there may be outstanding concerns on causation. In any case, the purpose of this chapter is not to prove causality between loans and job growth, but rather to serve as a robustness check for correlation.

Box 3.4: SME JOB CREATION AND PRODUCTIVITY

An important part of the story of development through increased access to finance is the impact it has on firm productivity. The model discussed below does not attempt to model the relationship between productivity and finance. This relationship is, by nature, endogenous and further investigation is needed to understand whether more loans result in higher firm productivity. For instance, while loans tend to have a positive impact on job creation, this could come at the expense of reduced productivity. The following analysis seeks to examine this area. The dataset collects information on sales, so a proxy for productivity is real sales per worker in logs.

Table A5 (see Annex) illustrates the estimates from different specifications and samples, where the dependent variable is sales per worker, and the independent variable is loans. The first two columns in the table estimate the effect of loans with and without weights. Holding all else equal, increasing the size of credit by \$1 million implies a 142-percentage point increase in productivity over two to three years at the firm level. In practice, loans of this size are rarely given to

SMEs. However, this does indicate a positive relationship between loan size and productivity. Columns 3 and 4 in the table also check to see if this relationship holds true for different subsamples: up to 100 employees, and above 100 employees. Although the significance is marginal, the effect is larger in magnitude for smaller SMEs. The last two columns in the table check whether the fact that some firms report the data over the past two or three years influences the finding. However, the relationship between loan size and productivity does not change.

The results show that higher loan size is associated with higher productivity. This implies that the financial intermediaries through which the loans are disbursed tend to select the more productive firms. Although the magnitude seems too high, the sign is positive and significant. It seems that more loans imply higher productivity, but it is difficult to make precise conclusions about the magnitude due to data limitations. Nevertheless, these results do seem to show that there is a clear positive relationship between loan size and sales per worker.

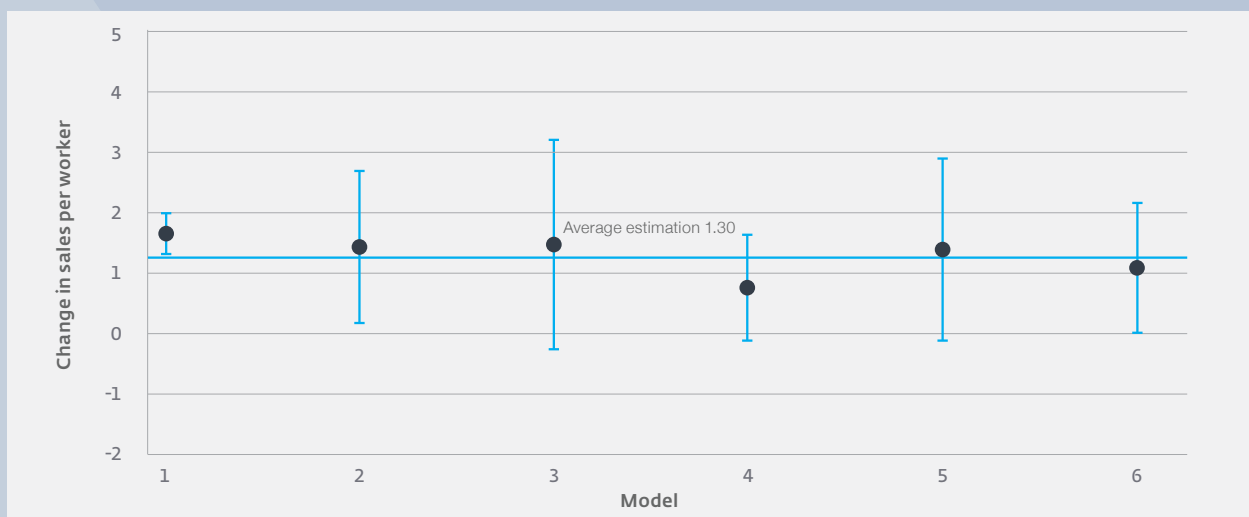


Figure 3.5: Estimated coefficients on productivity (sales per worker)⁷⁵

Source: Authors' calculation, based on Enterprise Survey data.⁷⁶

⁷⁵ Productivity (real sales per worker) estimation on the SME sample with employment change restricted to +/-249.

- 1 – Baseline estimation, unweighted
- 2 – Baseline estimation, weighted
- 3 – Baseline estimation restricted to “up to 100” employees sample (10–100), weighted
- 4 – Baseline estimation restricted to “100+” employees sample (100–249), weighted
- 5 – Baseline estimation restricted to firms reporting employment change over two years, weighted
- 6 – Baseline estimation restricted to firms reporting employment change over three years, weighted

⁷⁶ See Table A5 in the Annex.

Box 3.5: SME JOB CREATION AND GENDER



Capturing gender issues when linking access to finance and job creation in firms is challenging—simply because the data rarely allow for this. Even if a dataset such as the ES is collected to illustrate potential differences based on the gender of employees or owners, the data quality is usually insufficient for drawing precise conclusions. This makes it difficult to distinguish between a finding driven by the quality of data and one which is generated by an actual issue. That is why the approach taken in this report is to determine whether the information about access to finance and job creation allows for the capture of any significant gender-related insights—while exercising caution when interpreting the findings.

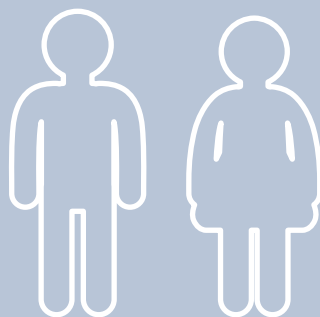
The dataset used in the authors' analysis collects information on the gender of business owners. Recently, the World Bank Group began encouraging client governments to adopt active policies to enhance female labor force participation. With the provision of external financing and improvements in the ease of starting a business, some positive results across countries are expected. The magnitude or level of significance, however, is difficult to predict in advance.

By itself, female ownership is not very informative for job creation, as a high or low share of woman-owned firms could be a result of unobserved processes that differ from country to country. Instead, this paper uses a triple difference to better capture the effects

of loans on female-owned enterprises. (This method reduces the bias in the estimate of the effect of the loan when other variables such as time and place are present along with gender). The additional dimension of interaction to consider is how young a firm is (from one to five years, versus six and above). The reasoning behind this approach is that, based on the data, female owners are more likely to be found in young establishments rather than in older ones (based on the assumption that gender discrimination is still prevalent in an economy/society). In addition—and aside from gender—the age of the firm may by itself produce different correlations between loans received and job creation outcomes.

Table A6 (see Annex) shows the regression results. Column 3 presents the triple difference estimates. A young firm with a female owner who has a loan creates, on average, three additional jobs over three years. Although the result is marginally significant, this positive sign hints that improved access to finance tends to benefit young, female-owned enterprises.

This result must be interpreted with caution because of the limited data available. Further research needs to be conducted to gather new data in order to understand the theory of change and test it empirically. However, this represents a first step in understanding the relationship between improved access to finance and job creation in female-owned enterprises.

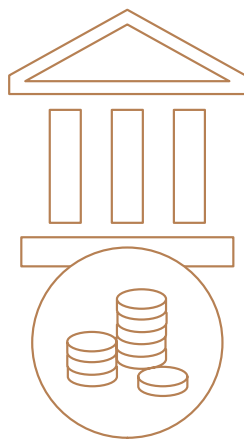


Implications for development finance institutions

Several DFIs, including IFC, work with financial intermediaries to facilitate lending to SMEs. These DFIs are typically interested in being able to estimate and report on the development impact of their lending activities. IFC, as previously noted, undertakes an annual Reach Survey of client financial institutions to collect aggregate lending data separately for MSMEs. More data on SME lending activities are collected separately by DFIs, either during initial project financing or during monitoring. DFIs primarily track the number of SMEs reached and the volume of financing provided to them. Further information on how a given SME is using its financing to grow its labor force is typically not readily available via standard data collection efforts. Thus, the methodology presented in this chapter may serve as a tool for DFIs to engage more systematically with this kind of analysis.

When information about financial institutions' lending to SMEs is known, holding all other things constant, regression analysis can help estimate the extent of the permanent, full-time job creation associated with increased financing. The implicit assumption of such an exercise is that the SME lending activities of financial institutions mirror those of the overall economy, as proxied by the ES.⁷⁷

But what if this assumption is not entirely true? (For example, if the SME profile of a certain financial institution significantly deviates in sectoral focus from the overall



economy.) The regression estimates presented here control for this issue, along with a several other variables, and the jobs extrapolation can be made richer by extracting and using more information about the SME profile of the particular financial institution. Further data collection and potential data sharing among DFIs could be controlled for in the extrapolation to produce better estimates.

We have already noted that it requires significant resources to effectively reach out to SMEs, whether through surveys or by other means. Chapter 2 illustrated how IFC annually collects the loan portfolio data of its clients through its MSME Reach Survey, and then how such data can be used to extrapolate the number of jobs created by their financing activities. The key metric is the number and volume of outstanding SME loans.⁷⁸

A second topic relating to the extrapolation is that, as of 2018, the MSME Reach Survey has only collected information about the total outstanding balance of loans, having stopped collecting data on loans disbursed in the year.⁷⁹

Because the regression framework and the underlying data are predicated on new loan origination and the jobs added over the subsequent two years, this poses a challenge. As a result of this lack of loan disbursement data from IFC client financial institutions, there is a need to make additional assumptions to arrive at a figure for the loan volume that originates in a given year from outstanding loans and average tenor/churn rates.⁸⁰

⁷⁷ It should be noted that this assumption is not from the ES, nor is it in the multiplier estimation (where ES is relevant), but rather on the extrapolation to IFC's reach described in Chapter 2. Future research to improve job creation estimates may use alternative specifications to mirror lending activities of financial institutions. For example, an active area under consideration relates to differentiating between first time and repeat borrowers, and the differential effect on job creation from these groups of borrowers. With such granular estimates, and additional reporting from financial institutions that is not currently collected, the assumption that SME lending activities of financial institutions mirror those of the overall economy could be relaxed.

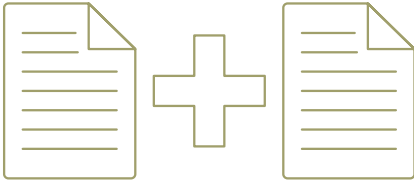
⁷⁸ The SME definition used by the Reach Survey is based on loan size proxies. Small enterprises are classified as those with loans between \$10,000 and \$100,000, and medium enterprises as those with loans from \$100,000 to \$1 million (the upper bound is \$2 million for some countries).

⁷⁹ The decision to stop collecting disbursement data in the MSME Reach Surveys was made primarily as a result of an internal review, which observed that disbursement data tend to over-estimate the reach of IFC's client financial institutions. As disbursement data measure how many SMEs received a loan each year, those data are unable to capture whether the SMEs repaid their loans within a few months or a year. As a result, SME disbursement data measure the total number of SMEs that receive a loan but are unable to capture how many SMEs actively use a loan over more than one year. On the other hand, data on outstanding loans provide a more conservative estimate of the reach of IFC's client financial institutions, since those data measure the number of SMEs with a tenor of more than one year. A truer measure would be the number of SMEs being reached. But most financial institutions do not capture data on the number of unique SMEs they reach, and instead track disbursements and outstanding loans.

⁸⁰ Outstanding loans are typically lower than disbursements as they take into account pre-payments.

What the multiplier reveals when applied to IFC’s portfolio

The scenarios below explore the implications of the multiplier on IFC’s client MSME reach and what it might mean in the local economies where IFC’s clients operate. Information on both the outstanding loans balance and the annual disbursed amounts can be used together to approximate the client financial institutions’ average tenors for loans. This average tenor also gives a sense of the “churn rate”—the rate at which financial institutions churn the financing over by issuing loans, receiving repayments, and then issuing new loans. In the absence of data on outstanding loan balances and annual disbursements, the authors have developed two scenarios to quantify the churn rate based on IFC data on both variables from MSME Reach Surveys.



SCENARIO 1: ASSUMING TENOR TO BE 1.89 YEARS ON AVERAGE

IFC’s MSME Reach Survey currently only collects information on the total outstanding balance of the SME loan portfolio of client financial institutions. Until 2014, information on the loans disbursed was also collected. This scenario assumes the average tenor of loans received by SMEs to be 1.89 years, which is similar to what IFC has seen in the Reach survey over the past 14 years.

	ESTIMATE	LOWER BOUND ⁸¹	UPPER BOUND
SME job creation (since IFC engagement)	20,202,184	9,667,303	31,480,704
SME job creation (2018)	6,064,374	2,901,970	9,450,006

Table 3.2: Scenario 1—extrapolated job creation⁸²

Source: : Authors’ calculation.

Churn in the financial institution’s outstanding balance, at a rate implied by the average maturity found in the MSME Reach Survey, increases the number of jobs created considerably.⁸³ Based on past experience with SME finance

through its clients, this scenario suggests that IFC’s active financial institution clients’ SME lending was related to the creation of about 20.2 million new jobs since their engagement with IFC.

⁸¹ The upper and lower bounds are computed using the lowest and highest estimate from the range of regressions.
⁸² As explained in the introduction, a conservative estimate if we were to only rely on-lending of IFC’s funds rather than the client’s overall SME portfolio growth, the estimated SME jobs created range from 518,166 to 673,053 in 2018 and 1,494,625 to 2,228,213 since IFC engagement.
⁸³ The churn rate for this report is the rate at which, on average, banks roll over their loan book after SME customers repay their loans. It can be measured as 1 over tenor of loan (the inverse of tenor).



Box 3.6:
**ADDITIONAL SCENARIO: USING LOANS DISBURSED
AS COLLECTED IN 2014**

Until 2014, the IFC MSME Reach Survey collected information on loans disbursed. If reported accurately, this measure is compatible with the data and methodology of the regression model. According to the MSME Reach Survey in 2014, IFC clients disbursed 3.6 million SME loans, totaling \$303 billion. No additional assumptions about changes year-on-year, or churn rates, need be made.

As a way of comparing results obtained from the average maturity assumptions outlined above and actual loans disbursed, this scenario calculates extrapolated SME job creation using loans disbursed in 2014 (the last available year) and compares it to the 2014 job creation number obtained under the assumptions of Scenario 1.

	ESTIMATE	LOWER BOUND	UPPER BOUND
SME job creation (2014)—Disbursement	2,721,295	1,302,215	4,240,545
SME job creation (2014)—Scenario 1	1,905,938	912,044	2,969,990

Table 3.3: Additional scenario—extrapolated job creation

Source: : Authors' calculation.

Results show that, for 2014, extrapolating job creation using the loan disbursement number yields higher numbers than even this churn scenario. This suggests that using outstanding loans as an explanatory variable in the authors' estimates may underestimate the results, when compared to using loan disbursements. However, this is intentional, as the authors wish to avoid over-estimating the results that loans have on job creation.

	ESTIMATE	LOWER BOUND	UPPER BOUND
SME job creation (since IFC engagement)	13,526,429	6,472,770	21,077,994
SME job creation (2018)	4,656,280	2,228,159	7,255,799

Table 3.4: Scenario 2—extrapolated job creation⁸⁴

Source: : Authors' calculation.

SCENARIO 2: ASSUMING TENOR TO BE 3.78 YEARS ON AVERAGE

A more conservative assumption of the churn rate is based on loan maturities calculated using data that IFC collected through expanded appraisals and the SME tracer surveys for about 1,200 SMEs. The data suggest a global average tenor of 3.78 years, which is in line with IFC's experience with risk sharing facilities where, in general, it introduces SME lending to partner financial institutions or incentivizes them to provide longer tenor loans to SMEs.

The slower churn rate implied by the longer maturity in Scenario 2 means that estimates of job creation are revised downward. Under this assumption, existing IFC clients' lending to SMEs was related to the creation of an estimated 4.7 million jobs in 2018, and an aggregate of 13.5 million jobs since their engagement with IFC.⁸⁵

Global context and conclusion

Both the review of recent literature on SME job creation and further analysis using the ES suggest that the share of private sector (non-agrarian) jobs created by SMEs could be as high as 90 percent of all net employment growth (Aga et al. 2015).

From a lending perspective, the percentage of jobs created (that are related to IFC client financial institutions' SME

lending via extrapolation) can be viewed according to IFC client financial institutions' MSME lending as a percentage of overall MSME lending in developing countries. Data for the latter come from IFC's computations using the International Monetary Fund's Financial Access Survey dataset.⁸⁶ The data show that in 2018, in developing countries, IFC client financial institutions contributed about 11 percent of the total for outstanding MSME loans with implications for jobs across countries. The high rate of SME job creation associated with the financing provided by IFC's client financial institutions supports the conclusion of previous research, which reveals the extent to which SMEs are credit constrained, and the importance of relieving these constraints—not only for their growth, but also to support job creation and economic growth. In addition, other DFIs or financial institutions can now estimate their own SME clients' job creation using the methodology presented in this chapter.

By itself, the quantitative analysis of this chapter may not be sufficient in proving without a doubt that increased access to finance translates into additional permanent jobs. Due to data quality and design constraints, it is very difficult to prove a causal relationship. This is where qualitative analysis can help.

The next chapter presents six case studies from IFC's financial institution clients. These cases align with the results of using the framework presented above and provide a picture of the positive effects of access to finance on the ground.

⁸⁴ As explained in the introduction, a conservative estimate if we were to only rely on the on-lending of IFC's funds rather than the client's overall SME portfolio growth, the estimated SME jobs created range from 518,166 to 673,053 in 2018 and 1,494,625 to 2,228,213 since IFC engagement.

⁸⁵ As noted earlier, this does not mean that IFC's support to its clients directly created jobs, but rather that the job extrapolations can be done for as far back as data are available. Because IFC collects data from its clients, we are able to do extrapolations using the data collected since their first engagement with IFC.

⁸⁶ This computation was part of IFC's estimation of the MSME financing gap in developing countries, which is available on the SME Finance Forum website: <http://www.smefinanceforum.org>.

IFC CASE STUDIES—HOW SME FINANCE SUPPORTS JOB CREATION AND GROWTH

IN BRIEF

- IFC's financial and technical support helped its clients create jobs and boost sales and assets among SMEs.
- SME loans are particularly beneficial for woman-owned businesses, increasing hiring of women and challenging perceptions.
- Loans are also benefiting first-time borrowers, boosting their growth and performance.

IFC understands the importance of addressing the SME finance gap and has taken steps to alleviate this key barrier to growth. Through its network of over 800 financial institution clients across more than 100 developing countries, IFC reaches many more SMEs than it ever could directly.

This chapter highlights the results from six tracer survey case studies to demonstrate how SME finance contributes to job creation and other outcomes.⁸⁷ The case studies also supplement the quantitative analysis of the previous chapter with snapshots of six different financial institutions:

- AU Financiers Limited (India, South Asia)
- Eastern Bank Limited (EBL) (Bangladesh, South Asia)
- RBL Bank Limited (India, South Asia)
- Bank al Etihad (Jordan, Middle East and North Africa)
- Banco Ganadero (Bolivia, Latin America and the Caribbean)
- CRDB Bank (Tanzania, Sub-Saharan Africa)



These are among the first case studies to be developed through IFC's tracer survey, and more studies will be published as additional data are collected and analyzed.

With IFC's financial and technical support these financial institutions created an enabling environment that raised the

likelihood that their client SMEs would, on average, achieve growth in their employment, sales, and assets (see extrapolated results in Table 4.1). This is especially relevant for groups such as first-time borrowers and woman-owned SMEs. Furthermore, the financial institutions themselves were able to grow their SME portfolios and lending capacity and, in some cases, helped firms transition from informal sector entities seeking microfinance to formal SMEs.

⁸⁷ It should be noted that these individual case studies were developed incrementally and thus did not track the same parameters. This is an issue that IFC is looking to resolve through further standardization.

FINANCIAL INSTITUTION	JOBS GROWTH (%)	SALES GROWTH (%)	ASSET GROWTH (%)	PROFIT GROWTH (%)	LIABILITIES GROWTH (%)	ESTIMATED JOBS CREATED (#)
AU Financiers (India, South Asia)	11%	6%	10%	5%	NA	148
Eastern Bank Limited (Bangladesh, South Asia)	4%	-2% ⁸⁸	-5% ⁸⁹	NA	NA	196
RBL Bank (India, South Asia)	6%	9%	7%	10%	NA	116
Bank al Etihad (Jordan, Middle East and North Africa)	5%	6%	14%	95% ⁹⁰	12%	401

Table 4.1: Summary of case study results⁹¹

Source: : Authors' calculation, based on tracer survey data.

Two of the case studies, CRDB Bank and Banco Ganadero, did not have endline data at the time, so they did not yet have results to share. However, the SMEs that received loans support a considerable number of jobs. For example, the SMEs supported by RBL Bank employ 1,102 people, CRDB Bank supported 1,188 jobs, and Banco Ganadero supported 2,291 jobs (see Table 4.2).

Although the existing number of jobs supported is not

the same as new jobs created, it should nevertheless be noted that these SMEs are sources of employment for many people. As such, supporting SMEs can still yield benefits even if the enterprises fail to create new jobs in addition to the existing ones. Not all these supported jobs can necessarily be attributed to the SME financing loaned by IFC's client financial institutions, but this context underscores the importance of sustaining DFI SME lending operations.

FINANCIAL INSTITUTION	JOBS SUPPORTED
AU Financiers (India, South Asia)	422
Eastern Bank Limited (Bangladesh, South Asia)	870
RBL Bank (India, South Asia)	1,102
Bank al Etihad (Jordan, Middle East and North Africa)	1,501
Banco Ganadero (Bolivia, Latin America and the Caribbean)	2,291
CRDB Bank (Tanzania, Sub-Saharan Africa)	1,188

Table 4.2: SME jobs supported per IFC client financial institution (baseline data)⁹²

Source: : Authors' calculation, based on tracer survey data.

⁸⁸ The decline is due to a significantly higher CPI of 155.7 in 2016 (2010=100). Unlike the other cases, the EBL case study had a control group, which had an even worse performance of -4 percent.

⁸⁹ This decrease was driven by sample firms in the trading sector, which was strongly affected by political and economic turmoil during Q4 2013 and Q1 2014 and had not yet recovered.

⁹⁰ The starting points (baselines) were low, resulting in the high profit growth seen here. A percentage increase from a smaller base is higher than when the base is larger. That being said, two-thirds of the firms in the sample did quite well, with growth rates above 20 percent (the median was 25 percent per year).

⁹¹ The percentages here are CAGR over two years, except for Eastern Bank Limited, which was done over a six-year period.

⁹² Banco Ganadero's loans supported many jobs because medium-sized enterprises make up a large proportion of the bank's SME clients, accounting for about 40 percent of the bank's SME portfolio by assets. AU Financier's numbers are low because a large portion of their loan book was to very small SMEs, with few employees.



There are some common themes in the case studies that go beyond the quantitative measures described above.⁹³ The first concerns the gradual role that SME loans play (among other factors in society) in transforming gender attitudes, a phenomenon that is improving the performance of woman-owned enterprises and, more broadly, the prospects for women in the workplace. In Jordan, for example, female-owned SMEs supported by Bank al Etihad had smaller baselines when compared to their male-owned peers but experienced higher annual asset growth of 25.89 percent (compared to 10.58 percent for men). In future, this growth in assets could allow woman-owned enterprises to “catch up” in size, performance, and productive capacity, with greater competitiveness that could lead to more hiring and other spillover effects across the economy.

In Bangladesh, based on the compound annual growth rate (CAGR), female-owned SMEs increased jobs for women by 2.46 percent, compared to -1.50 percent (CAGR) for firms owned by men. As Bangladeshi women continue to join the workforce and change attitudes toward their participation, it is noteworthy that the female-owned SME clients supported by EBL are contributing to this trend.

The second theme relates to the positive effects that SME finance has on first-time borrowers. In RBL Bank, over half of the SMEs in the sample were first-time borrowers of formal finance, having previously relied on personal finances, family and friends, or money lenders to fund their business. As discussed in the literature review, increased access to finance allows firms to use external financing rather than rely on their own finances, which can take years of saving or borrowing from informal sources. This increased efficiency makes a difference when it comes to firm growth. The results are encouraging, as seen in Bank al Etihad’s first-time borrower SME clients, which generally outperformed their established peers.

While first-time borrowers benefit from growing off a smaller base and may not survive (given that most start-ups still fail), it is nevertheless important that banks are able to support entrepreneurial businesses that could end up transitioning into high-growth firms.

The lessons from the six experiences outlined below may prove useful to DFIs in planning or assessing their own activities in SME finance.

⁹³ These themes are backed up by the data, which will be analyzed in more detail in the case studies presented in this chapter.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)⁹⁴

In Jordan, IFC's relationship with Bank al Etihad began in 2007 through a \$5 million (now \$10 million) Global Trade Finance Program facility.

In February 2014, IFC again engaged with Bank al Etihad to enable it to better serve SMEs (and especially woman-owned SMEs) in a sustainable and profitable manner.

An IFC study published in August of 2017 examined 127 active Bank al Etihad SME clients that received loans between 2014 and 2016. The study showed that the SMEs created an estimated 401 jobs, while their profits grew at an average rate of 95.16 percent annually (median 24.79 percent per year, with a standard deviation of 256.13 percent).⁹⁵

According to IFC's analysis, start-ups did particularly well, outperforming their older peers on all metrics. Bank al Etihad increased its SME portfolio from \$94.5 million in 2014 to \$177 million in 2016, while keeping 90-day non-performing loans at only 2 percent. Interviews with a selection of Bank al Etihad's SME clients revealed their level of satisfaction with the bank and the impact that their relationship had on their business.

The methodology used includes statistical analysis based on primary and secondary sources. Specifically, the study triangulated data from secondary sources, along with primary data from financial institution clients' management information systems, loan file reviews, field interviews with Bank al Etihad's employees and SME loan recipients. It also used statistical techniques such as regression analysis. A linear regression⁹⁶ was used to assess the correlation between bank loan amounts and firm outcomes, and controlled for the following firm characteristics: loan amount; initial capital investment; sector; status (whether the client was new or not); purpose of the loan; age of business; and gender of owner.

From the SME portfolio of 2,773 loans for 487 unique clients, a sample of 127 active SME clients that had received a loan between 2014 and 2016 was selected. About half of this sample consisted of businesses that took loans in multiple years. This was helpful because multiple loan forms were available from which to collect data. The second half

of the sample was randomly selected from the rest of the target portfolio after filtering out clients with an outstanding balance of zero, loan size outliers, and products such as personal or housing loans. The 127 clients represent a small enough sample to meet practical constraints, while being statistically large enough to derive meaningful inferences about the population overall.

The results of the cross-sectional ordinary least squares regression suggest that an increase of about \$1.4 million (1 million Jordanian dinars) in loans, while holding other factors constant, was associated with an increase of 8.43 jobs per year (on average) between 2014 and 2016.

The results of this study are specific to the sample reviewed and can only be used to extrapolate to a population with similar characteristics, such as SME clients with loans of between \$10,000 and \$1 million originating between 2014 and 2016—and in similar contexts and markets. Variable bias—

⁹⁴ Information for this summary is based on the full 2017 IFC Case Study on Bank al Etihad.

⁹⁵ Fifty firms were observed in the profitability analysis.

⁹⁶ Ordinary least squares and instrumental variables (IV).

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

where changes in key variables might be influenced by other indicators that were not analyzed in this study, such as the experience of business owners—was omitted. The total effects on key variables (growth in jobs, sales, assets, profits, and liabilities) cannot be attributed solely to the loans obtained, nor to IFC’s engagement with Bank al Etihad. There is no attempt to imply attribution to the bank or to IFC.

Nevertheless, the SME analysis showed the following encouraging findings:

On average, the firms in the sample generated increases in jobs, sales, assets, profits, and liabilities, as shown in Figure 4.1.⁹⁷ Overall, profits in the sample saw high growth, with an annual average of 95.16 percent growth (median 24.79 percent, with a standard deviation of 256.13 percent).^{98 99}

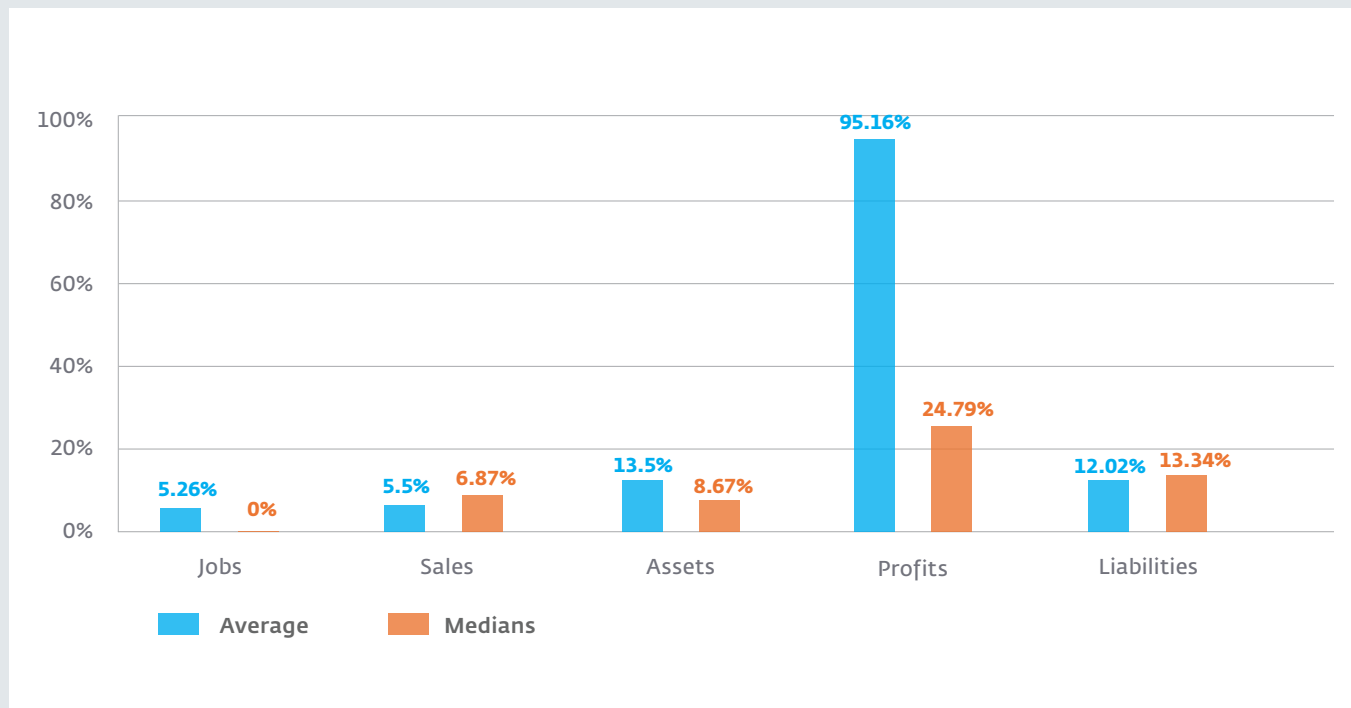


Figure 4.1: Sample annual growth rate across metrics

Source: IFC Bank al Etihad Case Study, 2017.

First-time borrowers outperformed other borrowers. As with all other metrics, Figure 4.2 shows that first-time borrowers performed better across all metrics than those that were not first-time borrowers, especially regarding profits (with average growth of 140.08 percent per year versus 64.09 percent, and a median of 29.99 percent versus 23.27 percent).

Most of the SMEs sampled (53 percent) had not previously received a loan from another financial institution before being granted one by Bank al Etihad. Firms that were first-time borrowers had an average annual asset growth rate of 15.75 percent (median 18.6 percent), compared to those that were not first-time borrowers, and an average annual asset growth rate of 12.64 percent (median 3.37 percent).

⁹⁷ In the regression, the estimated coefficients for loans on jobs, sales, and assets were positive, and statistically significant; respectively, at the 5 percent, 10 percent, and 1 percent confidence levels.

⁹⁸ In general, the standard deviations for the various growth rates calculated for the different metrics in this report are high because of the wide variety of SMEs in the sample, which come from a range of industries that have different production/inventory processes.

⁹⁹ The analysis on profits and liabilities is more limited than jobs, sales, and assets because fewer data were available.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

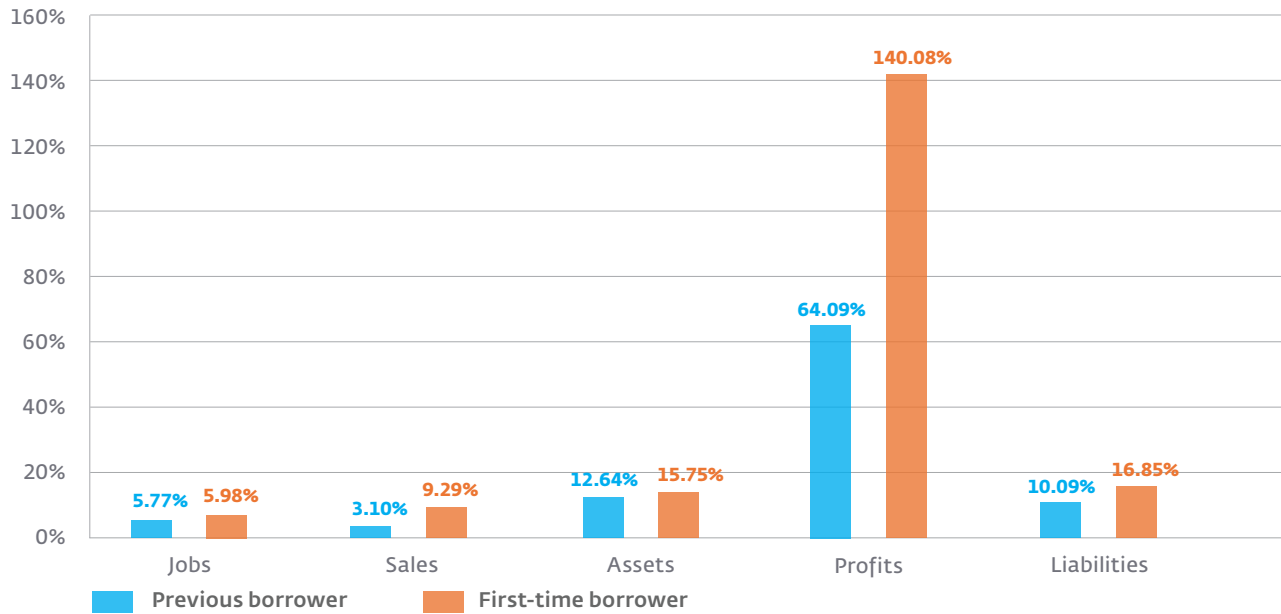


Figure 4.2: First-time borrower growth across metrics

Source: IFC Bank al Etihad Case Study, 2017.

Start-ups outperformed older firms on all metrics. Firms of up to three years old were considered start-ups. Aside from liabilities, where the growth rate was lower, these firms performed better than older, more established firms on all metrics (jobs, sales, assets, and profits). This may be, in part, because the older firms were more established, and thus started at a higher baseline. (See Figure 4.3 for a breakdown of start-up growth across metrics.)

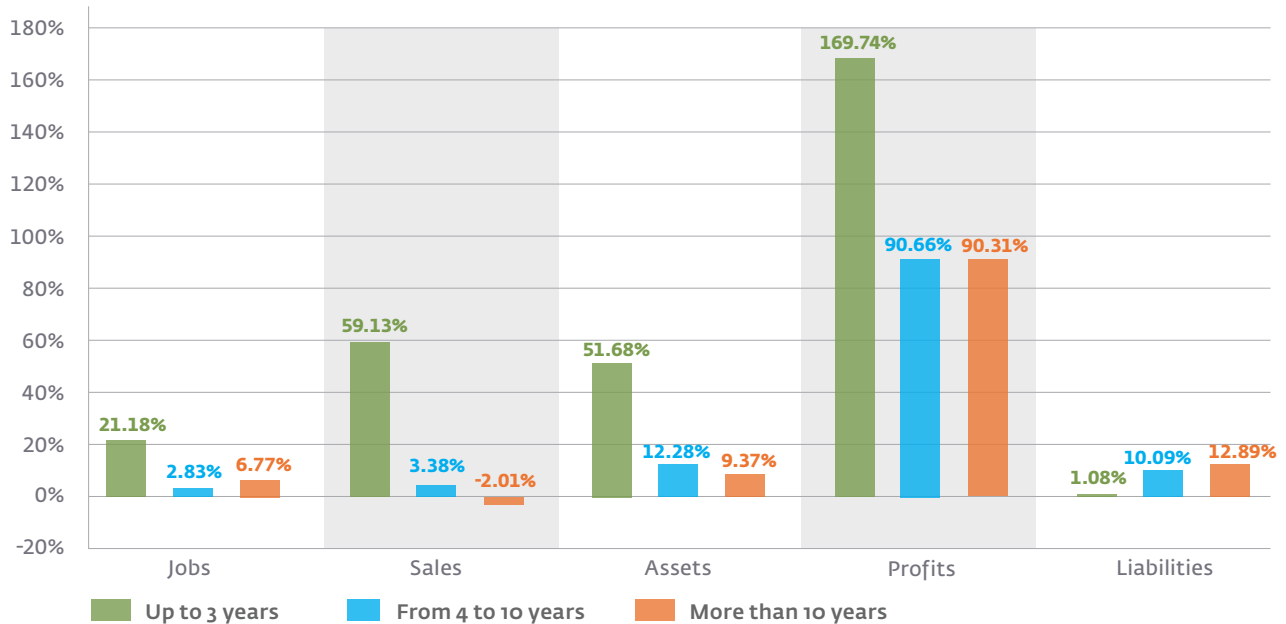


Figure 4.3: Start-up borrower growth across metrics

Source: IFC Bank al Etihad Case Study, 2017.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

Start-ups had the highest annual job growth rate of 21.18 percent per year (median 10.64 percent per year). As shown in Figure 4.3 above, this compares to an average of 2.83 percent per year (median 0.00 percent) for mid-age firms (in business for the last four to 10 years), and an average of 6.77 percent per year (median 2.58 percent) for the more established firms (in business more than 10 years). Similar trends can be seen in sales, assets, and profits—although, due to the smaller size of start-ups, the percentage increase from a smaller base is higher than from the larger base of established firms.

Nevertheless, the results for start-ups are promising, particularly in employment growth. When combined with the overall SME job growth recorded by the sample, it is consistent with the research findings in the literature that indicate that job growth is driven by a group of strong performers, often referred to as “gazelles” (Birch et al. 1995). Given the low survival rates of start-ups in general and the growth patterns of gazelles, this is an area that would benefit from further research. However, the sample’s overall results from 2014 to 2016 are notable given the worsening trend in Jordan’s overall labor market over the same period as this study, when the unemployment rate rose from 11.8 percent in 2014 to 15.8 percent in 2016.¹⁰⁰

Firms that used the financing for working capital had the highest employment growth.¹⁰¹ As seen in Figure 4.5, examining the purpose of loans reveals that employment

growth was the highest when the sample’s funds were used to increase working capital, resulting in 7.71 percent job growth per year (median 0.00 percent). This was followed by investment loans, which had an average annual growth rate of 6.29 percent (median 0.00 percent). Interestingly, refinance loans had a negative annual growth rate of -0.6 percent (median 0.00 percent), as shown in Figure 4.5. Firms in the sample that used the financing for investment purposes (mostly real estate) had the highest growth in sales, assets, and liabilities.



¹⁰⁰ See data for 2016 on the website of the Department of Statistics for the Kingdom of Jordan: <http://dos.gov.jo>.

¹⁰¹ This finding for loans used for working capital (and other results in the case studies) should not be construed as policy implications in favor of one approach over others. This is because the percentages are close, and the sample sizes are small. As such, the results presented in these case studies are meant to illustrate the potential effects of access to finance, rather than recommendations for one purpose over another.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

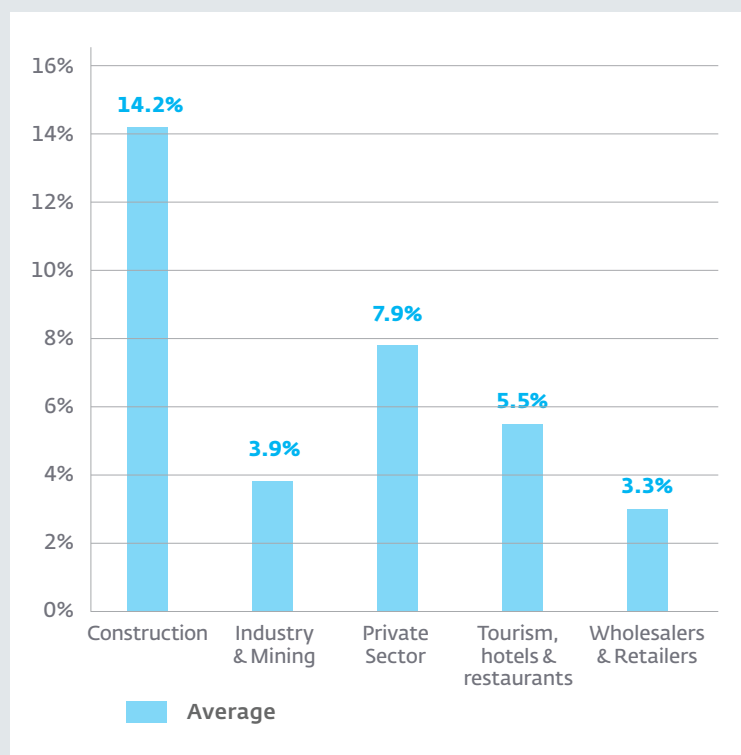


Figure 4.4: Annual employment growth rate by sector

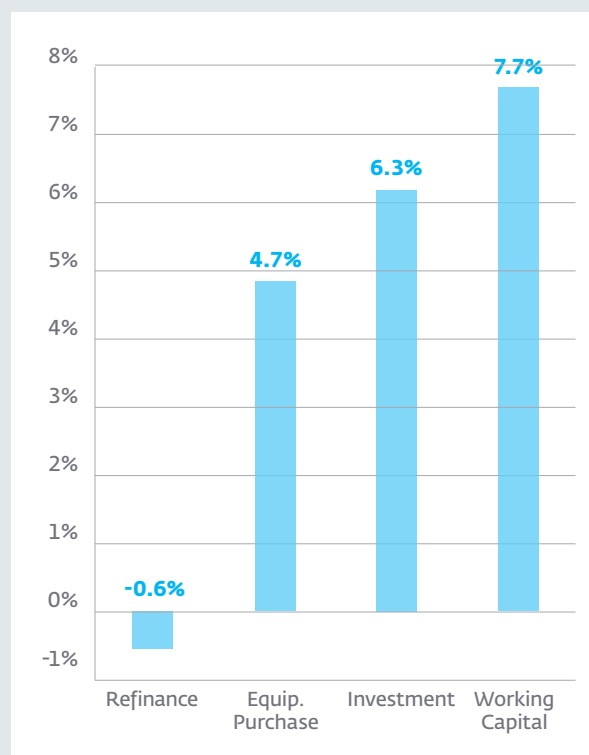


Figure 4.5: Annual employment growth rate by loan use

Source: IFC Bank al Etihad Case Study, 2017.¹⁰²

Due to their smaller baselines, the performance of woman-owned firms was mixed, showing higher growth in assets and liabilities, but lower growth in sales, profits, and employment generation.¹⁰³

Figure 4.6 shows the breakdown in performance across metrics for both female- and male-owned firms. Woman-owned SMEs in the sample received less financing, on average, than men-owned firms because the former were typically smaller—and consequently needed less financing. The average loan for a female-owned firm was \$66,180 (46,306 Jordanian dinars), while the average for a male-owned firm was \$158,271 (110,790 Jordanian dinars). This could explain the lower performance of woman-owned firms across metrics (with the exception of growth of assets and liabilities).

In terms of employment growth, Figure 4.6 shows that, on an annual basis, the firms owned by men grew at a faster pace than those owned by women (6.56 percent per year versus 0.9 percent). Medians per year were zero, which raises the possibility that woman-owned firms were more focused on increasing their assets, rather than on hiring. In terms of asset growth, female-owned firms did better than male-owned firms, with average annual growth of 25.89 percent (median 9.52 percent) and 10.58 percent (median 8.67 percent) respectively.

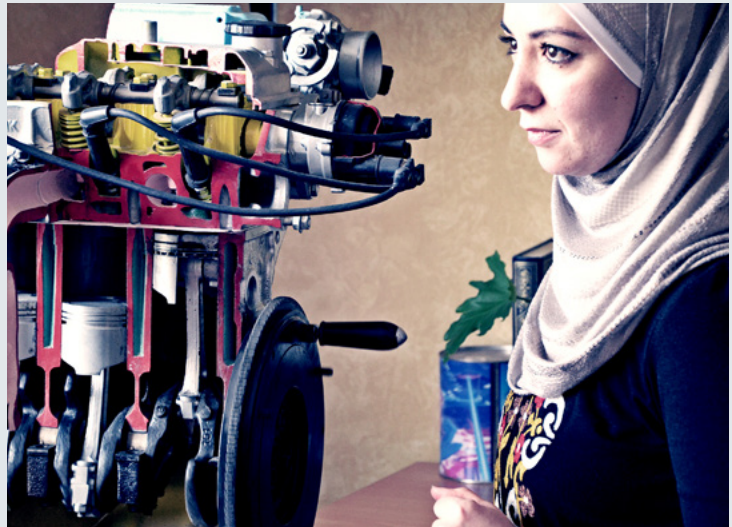
¹⁰² "Private sector" refers to firms in fields other than industry, tourism, trade, and construction. Examples include repair services, advertising, and scrap metal.

¹⁰³ As Bank al Etihad's management requested more insight into gender, this was then over-sampled in the original report. Thus, while the overall composition of female-owned SMEs in the target population was 13 percent, they accounted for 24 percent in the sample.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

Because of their smaller starting baseline, female-owned firms experienced higher growth in assets and liabilities. The average baselines for female-owned firms were \$468,429 (327,900 Jordanian dinars) in 2014 and \$212,010 (148,407 Jordanian dinars) in 2015, while the average baselines for male-owned firms were \$1.22 million (856,589 Jordanian dinars) in 2014 and \$942,281 (659,597 Jordanian dinars) in 2015.

This area would benefit from further research to see how female-owned firms' financing needs respond to greater access to finance, and whether the growth in assets promotes growth in other areas such as sales and job creation.



At the financial institution level, Bank al Etihad succeeded in becoming IFC's first Women-Banking Champion in Jordan, and the second in the Middle East and North Africa region.¹⁰⁴ Bank al Etihad's women's banking offering has helped to grow the total number of active women clients from 11,274 to 24,309—an increase of 116 percent.

Overall, this study suggests that SME clients that received loans from Bank al Etihad experienced positive effects on jobs, sales, and assets.

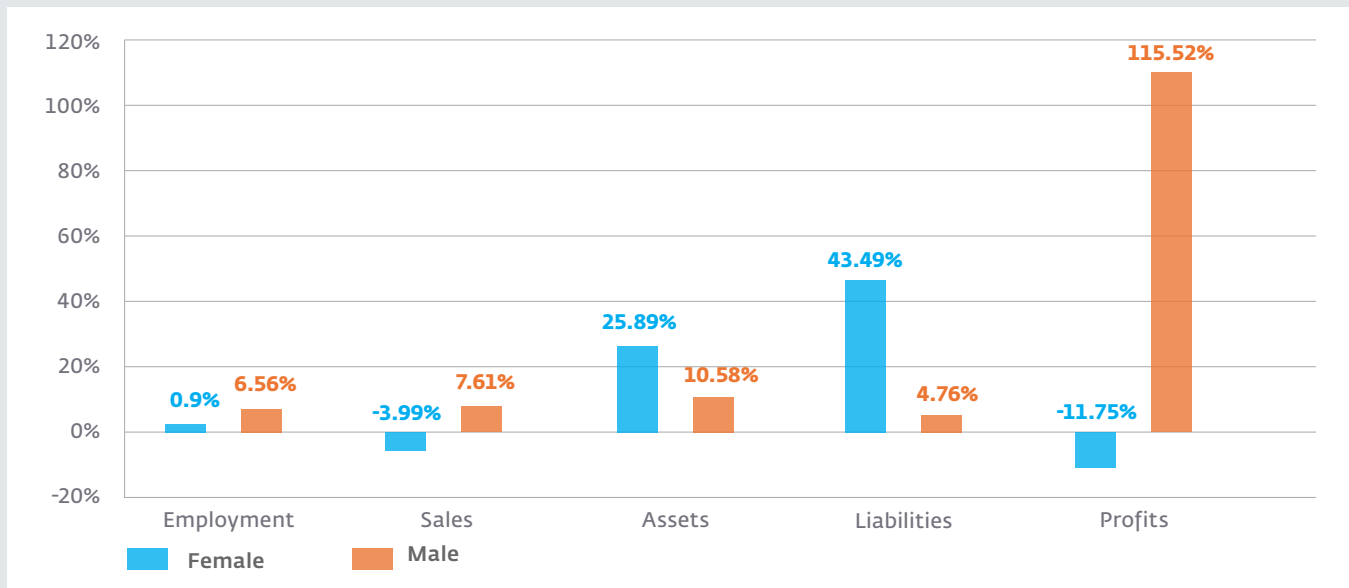


Figure 4.6: Growth in jobs, sales, assets, liabilities, and profits, by gender

Source: IFC Bank al Etihad Case Study, 2017.

¹⁰⁴ The status of Women Banking Champion is designated by IFC based on its own metrics, not external ones.

CASE STUDY 4.1: BANK AL ETIHAD (JORDAN)

To summarize IFC's findings, data collected from 127 SMEs show that the overall number of new jobs created in the sample increased at a CAGR of 5.26 percent between 2014 and 2016. This was complemented by growth in sales (5.5 percent), assets (13.5 percent), and profits (95.16 percent).

Another encouraging finding was that first-time borrowers performed better on all metrics compared to other firms in the sample. The analysis of female-owned firms showed that, in general, results were better than those of male-owned firms in terms of asset increases, and there were no non-performing loans for female-owned firms. However, male-owned SMEs performed better on the other metrics analyzed in this case study.

This case study adds to the growing body of evidence that when financial intermediaries provide access to finance for SMEs—especially first-time borrowers and woman-owned firms—one can expect to see a positive impact on financial inclusion and job creation over time.



CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

In March 2010, IFC supported AU Financiers Ltd. with its first equity investment of about \$7.8 million. This was followed up with two additional equity investments of about \$6.6 million in March 2012, and about \$4.8 million in April 2014.

In 2014, IFC loaned AU \$25 million by investing in a three-year secured non-convertible debenture (NCD) as a part of a strategy to leverage equity in IFC's key clients. In 2017, IFC invested in a \$50 million NCD, which will provide long-term funding as AU transforms itself into a small finance bank.

Extrapolating from regression results for a sample of 108 loan files from AU's MSME portfolio between 2012 and 2014, one job was created for every \$8,618 in loans. When applying this rate to the overall outstanding MSME portfolio of \$40 million, as of March 2012, the results suggest that over 4,190 jobs may be supported through this part of AU's portfolio alone.

Changes in performance include:

- an estimated 148 jobs that were added and 422 jobs that were supported over the 2012–14 period (CAGR of 11 percent)*
- sales growth of an average CAGR of 6 percent*
- income growth of an average CAGR of 5 percent*
- growth in asset value of an average CAGR of 10 percent*

AU expanded its loan portfolio to about \$804 million and increased its MSME borrowers to 183,867, while still maintaining a healthy portfolio (only 1.3 percent non-performing loans) and speeding up loan processing time.

This analysis shows that jobs and sales were positively associated with increased access to financial services: a loan of \$12,927 in FY2012 was associated with one additional job.¹⁰⁵



¹⁰⁵ This result differs marginally from the extrapolation result (\$8,618), as the regression coefficient is a more conservative estimate and is significant at 90 percent level.

CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

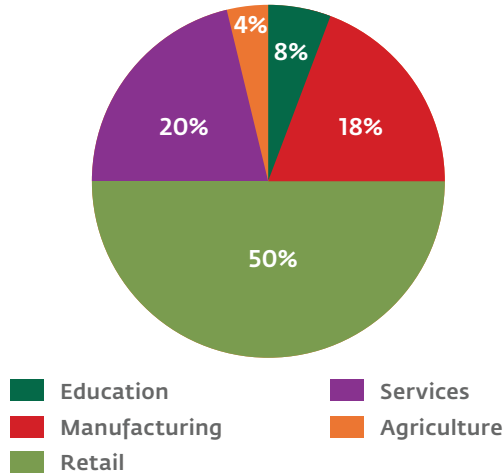


Figure 4.7: Sectoral distribution of sample files

Sources: IFC, based on an AU loan file review.

The authors' methodology includes statistical analysis based on primary and secondary sources. Using statistical techniques, including regression analysis, the study triangulated data from secondary sources, primary data from loan file reviews, and field interviews with AU's employees and MSME beneficiaries.¹⁰⁶ Out of a population of 857 clients, a sample of 108 active MSMEs that received loans of between about \$9,367 and \$46,837 (between 500,000 and 2.5 million Indian rupees) in FY2012 was randomly selected.¹⁰⁷ Although the sample of 108 clients was small due to practical constraints from the available data and survey methods, it was large enough to allow meaningful inferences about the population from which it was drawn.¹⁰⁸

Of the 108 MSME clients reviewed, for 2012 to 2014, AU's team collected information on about 90 clients on key variables (employment, sales, income, and assets), with slight variations per variable. This two-year period was chosen to measure employment effects for firms having the capital to start and expand operations, while limiting other external factors on job growth that could occur over a longer period. Nominal changes in these figures were converted to real figures, with 2012 as the base year.¹⁰⁹ Given limitations in the loan files, and the nature of field-based interviews, the total

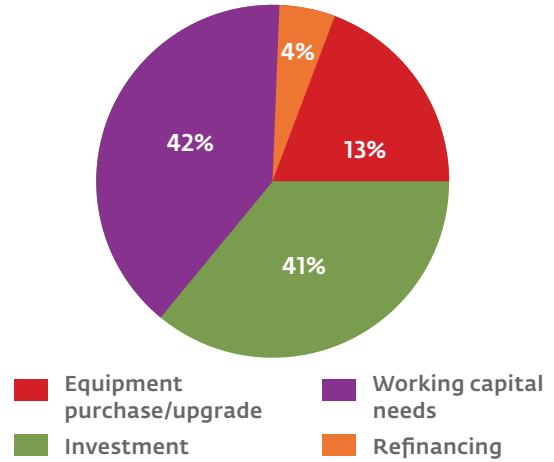


Figure 4.8: Purpose of loans sampled

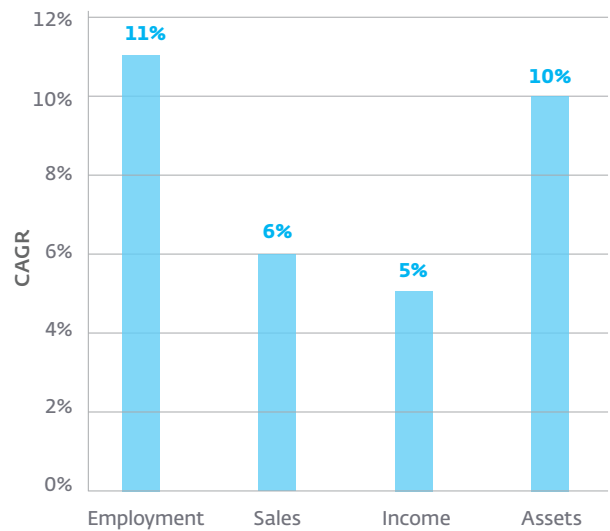


Figure 4.9: Average growth in key variables

Source: IFC, based on AU loan files and a loan officer review.

impact on key variables cannot be attributed solely to the loans obtained from AU, or to IFC's engagement with AU. Rather, the purpose is to check for correlation.

This case study shows that, overall, the firms in the sample grew in employment, sales, income, and assets during the time covered by the study, as shown in Figure 4.9.

¹⁰⁶ The following annual average (Indian rupees) Rs per \$ exchange rates were used for this case study: 2012: 53.38; 2013: 58.51; and 2014: 61.01. For amounts spanning multiple years, the average of the three years was used (57.63).

¹⁰⁷ A threshold of Rs500,000 (\$9,367.56) was used to identify and focus on the SME portion of the MSME portfolio (referred to as MSME loans in this case study).

¹⁰⁸ Of the 108 clients, 50% (54 clients) were in the retail sector; 20% (~22 clients) were in the services sector; 18% (~19 clients) were in the manufacturing sector; 8% (~9 clients) were in education; and 4% (~4 clients) were in agriculture.

¹⁰⁹ Conversion factor for 2014 figures were FY14 Real value = Nominal Value/122*100. Note that the CPI for 2014 with 2012 as base year is 122.

CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

AU beneficiaries showed employment growth and, on average, increased employment by two workers in total during the 2012–14 period. Employment in the whole sample grew from 655 to 803 employees, representing an 11 percent CAGR increase in jobs. This compares favorably with the 10 percent overall growth rate of the Indian economy during the same period and is noteworthy in the low-income states where AU primarily operates.

Employment growth varied across economic sectors, with strong job expansion in the retail, services, and education sectors. As seen in Figure 4.10, different results were observed for different economic sectors. During the study, most of the growth in jobs in the sampled firms occurred in the retail sector, which also accounted for over half of the observations in the sample.¹¹⁰ In the sample, observed employment in the retail sector grew by 92 jobs, out of the total growth of 148 jobs. The services and education sectors also showed strong growth in total employment, with an increase of 38 and 47 jobs respectively. Although the manufacturing firms with financing showed a small decrease of 2 percent in employment, this is consistent with other variables studied and reflects how macroeconomic conditions (such as high inflation, a weak currency, and a fall in foreign investment—coupled with unreliable sources of power during the study period) affected manufacturing firms.¹¹¹

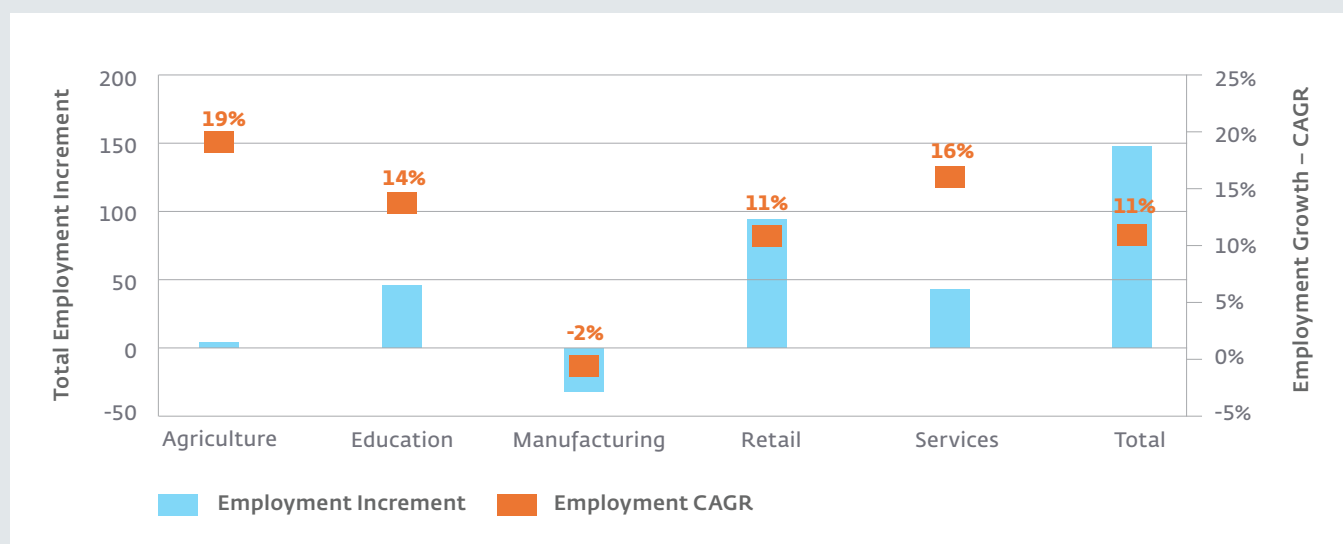


Figure 4.10: Total employment and growth by sector

Source: IFC, based on AU loan files and a loan officer review.

Firms of different ages exhibited different patterns of employment growth, with high growth in young and old firms. New firms of up to five years old grew at a CAGR of 20 percent, while old firms (over 10 years) grew at a rate of 12 percent. Mid-age firms (five to 10 years) lost jobs at a rate of 7 percent annually. The absolute contribution of older firms to the incremental growth of jobs in the sample was the highest, with 69 jobs gained.

The size of the firms studied also showed important differences in employment, with small firms showing higher growth, but larger firms contributing more in absolute terms. As seen in Figure 4.11, small firms with two to 10 employees showed an average CAGR of 14 percent, while those with more than 10 employees grew at only 3 percent. However, in absolute terms, the contribution of the larger firms in the sample (above 10 employees) was significant, with 66 jobs added—slightly less than the 76 jobs added by firms with two to 10 employees.

¹¹⁰ This and all case studies in this publication use stratified random sampling by sector, location, and size of firm.

¹¹¹ BBC. 2014. “India’s economic growth disappoints”. Link: <https://www.bbc.com/news/business-27638906>

CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

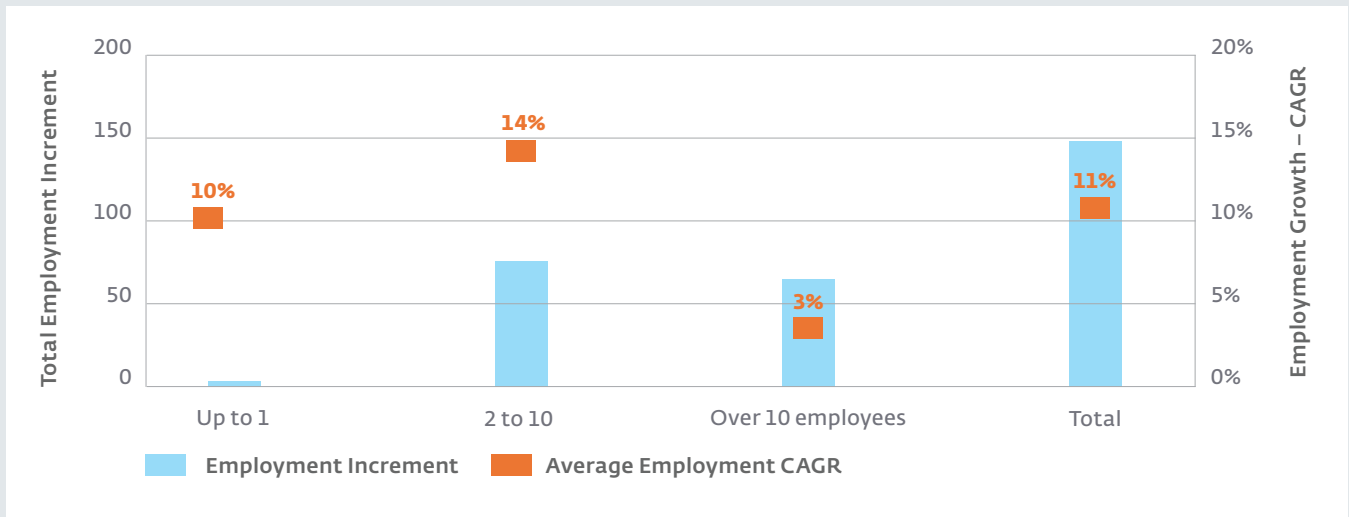


Figure 4.11: Total employment and growth by firm size

Source: IFC, based on AU loan files and a loan officer review.

Sales for beneficiaries in the sample grew by an average CAGR of 6 percent over the period studied. The average sales increase was about \$8,120 for firms for which observations were available in 2012 and 2014. Again, enterprises in different sectors showed different levels of growth in sales, as seen in Figure 4.12. While retail and services firms increased sales at a rate of 8 percent and 9 percent respectively, education enterprises grew by a rate of 3 percent. However, the sales of manufacturing firms declined by 6 percent. As noted previously, the decline in sales for manufacturing firms over the study's period is likely due to the macroeconomic difficulties they encountered.

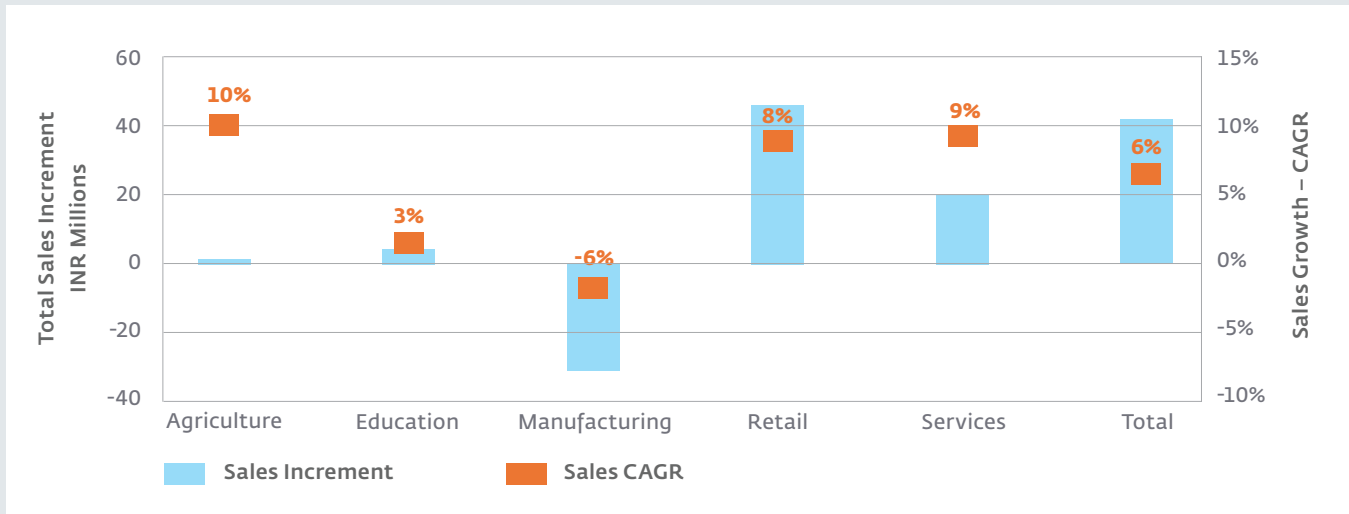


Figure 4.12: Total sales and growth by sector

Source: IFC, based on AU loan files and a loan officer review.

CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

The beneficiaries in the sample saw an increase in net incomes during the study period at a CAGR of 5 percent, which was slightly below the rate at which sales increased. Retail, services, and agriculture performed well, with a CAGR of 7 percent, 7 percent, and 8 percent respectively. During the same period, education beneficiaries experienced a CAGR of 1 percent, and manufacturing firms had a negative CAGR of -7 percent. In absolute terms, in total, retail firms in the sample increased their incomes by about \$64,199, while service firms increased by about \$32,967.



The growth in asset value for the SMEs sampled was an impressive 10 percent average CAGR. Retail enterprises in the sample accounted for the largest absolute share of the growth in assets, with an increase of over \$867,548. This is followed by education enterprises, with an increase in assets of more than \$485,827, and then service firms with an increase of nearly \$468,476. Manufacturing and agriculture enterprises saw smaller increases. In percentage terms for the real value of assets, education firms, at 23 percent, had the highest CAGR. Retail followed, with a CAGR of 12 percent in assets, and services with a CAGR of 9 percent in assets. Although manufacturing firms saw an absolute increase in assets, their average CAGR was slightly negative.



Despite a challenging macroeconomic environment in 2011 and 2012 (with slow growth thereafter), clients with MSME loans showed positive effects on jobs supported,¹¹² sales, income, and assets. Retail and services enterprises in the sample consistently performed the best across different measures, as seen in Table 4.3. While education and agriculture enterprises also performed well across most measures, both sectors had small sample sizes of less than 10, which means that the analysis of these sectors on their own is less significant. Manufacturing enterprises showed the worst performance in the sample across all measures. However, this performance was influenced by negative outliers.¹¹³

¹¹² Jobs supported refers to the number of jobs reported at the endline, while jobs created (or lost) is the difference between jobs at the baseline and endline.

¹¹³ An analysis of trimmed means for the sample showed improved results across all measures.

CASE STUDY 4.2: AU FINANCIERS LTD. (INDIA)

SECTOR	EMPLOYMENT CAGR	SALES CAGR	ASSETS CAGR	INCOME CAGR
Agriculture	19%	10%	2%	8%
Education	14%	3%	23%	1%
Manufacturing	-2%	-6%	-3%	-7%
Retail	11%	8%	12%	7%
Services	16%	9%	9%	7%
Total	11%	6%	10%	5%

Table 4.3: Sectoral growth on all four dimensions

Source: IFC, based on AU loan files and a loan officer review.

As seen in Figure 4.13, new firms performed best in the sample, outpacing others on three out of four measures (except asset growth). Firms aged between five and 10 years had negative performance on most variables. However, these were influenced by outliers, and median values for all variables were higher and positive (except for employment, with 0 percent median growth).

Firms older than 10 years showed positive performance for all growth measures.

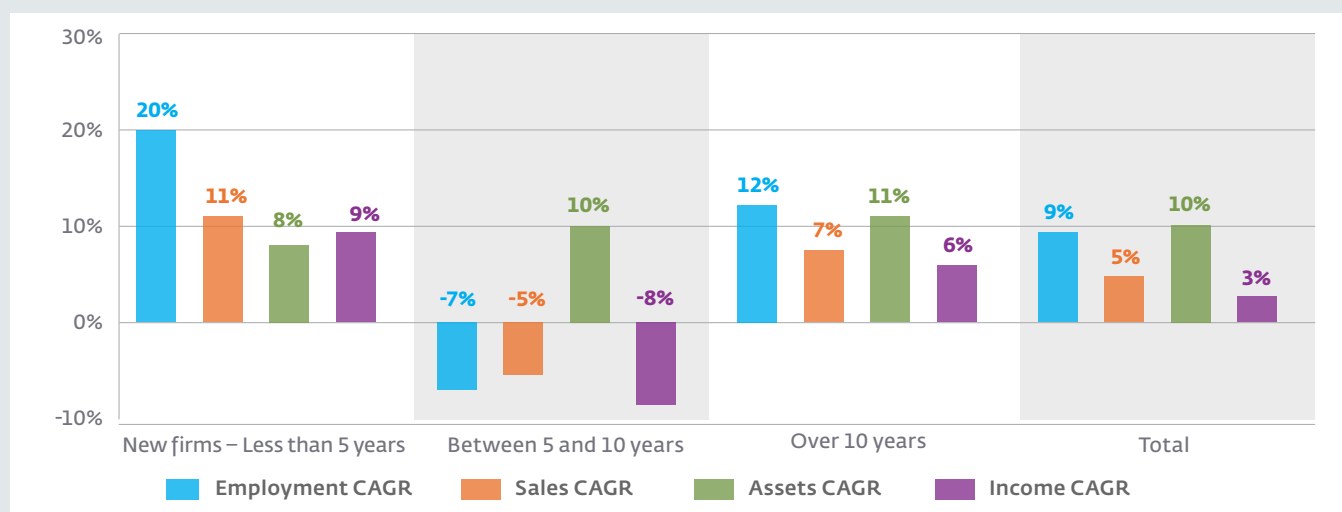


Figure 4.13: Growth on all four dimensions, by age

Source: IFC, based on Au loan files and a loan officer review.

This study reinforces that financial intermediaries providing access to finance for SMEs can promote financial inclusion and job creation, while positively affecting the financial performance of MSMEs.

This point is supported by the regression results: based on a representative sample of SMEs that received a loan from AU, one job was created for every \$8,618 in loans from AU in 2012. When applied to the overall outstanding MSME portfolio, this suggests that over 4,190 jobs may be supported through this part of AU's portfolio alone. This case study demonstrates to DFIs that intermediaries should continue to support SMEs and individuals that lack access to formal financial services.

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

In India, IFC's relationship with RBL Bank Limited began in 2013 with an equity investment of 4.5 percent in the bank. In 2014, IFC also extended a Global Trade Finance Program line to RBL to help the bank provide short-term working capital to SMEs.

Extrapolating from regression analysis of the 113 SME clients that received a loan over the years FY2012–15, an average of 10 to 15 jobs were created per year for every \$1 million that RBL loaned to SMEs. When applying this to RBL's overall SME portfolio since 2013, the SME beneficiaries of RBL created 5,600 to 7,200 jobs over the same time period. Clients' income and sales grew by an average of 10 percent and 9 percent CAGR respectively (see Table 4.4).

The SMEs, which employed 1,102 people at the time of loan approval, continued to grow employment at an annual rate of 6 percent post-loan. Assets grew by 7 percent from receipt of the loan and productivity increased, with sales per worker growing at an annualized rate of 6 percent.

A smaller group of fast-growing businesses (known as gazelles) accounted for almost all of the job growth, despite making up just 27 percent of the sample.¹¹⁴ Twenty-four percent of the new jobs were for women, which is significant given that only four out of 10 SMEs currently employ any women. The authors would like to recognize the UK's FCDO-CDC and the Let's Work program for their involvement in and contribution to the RBL Bank project.

IMPACT	AVERAGE ANNUAL GROWTH RATE SINCE RECEIVING A LOAN (CAGR)	PROPORTION OF BUSINESSES THAT GREW
Sales	9%	85%
Income	10%	80%
Assets	7%	81%
Employment	6%	27%
Female employment	4%	10%

Table 4.4: Performance of SMEs after receiving a loan from RBL Bank (2012–15)

Source: IFC-CDC RBL Case Study, 2017.

¹¹⁴ The effect of gazelles on job creation is now a standardized variable for IFC studies; however, in older studies or in some case studies (below) the effect of gazelles is negligible.

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

The methodology used in this case analyzed both primary and secondary sources. Baseline data were collected over FY2012–15 and endline data were collected two years following the loan for a sample of active clients that received a loan of between \$8,000 and \$1.6 million.

The study team reviewed RBL's SME client loan files to extract information such as the number of employees, women's ownership, sales, assets, income, sector, firm age, use of financing, first-time borrower status, and other indicators. The team also conducted a qualitative analysis by visiting the premises of eight clients and used additional data from RBL's management information system. Once the dataset was finalized, SMEs with outliers for at least three or more variables were removed, resulting in 113 observations for the growth analysis.¹¹⁵

Because it is difficult to isolate macroeconomic and business conditions in the country, the total effects on key variables cannot be attributed solely to the loans obtained from RBL or from IFC's engagement with RBL.¹¹⁶ That being said, a basic linear ordinary least squares regression was used to assess the correlation between bank loan amount and job creation outcomes, controlling for a range of firm characteristics.



Two years after receiving their loans, the SMEs in this case study had a total staff complement of 1,218—an increase of 116, representing a CAGR of 6 percent.

It is noteworthy, however, that most firms (65 percent) experienced no change in employment, indicating that it was the 27 percent of large job creators that were pulling up the average.

While there was a significant relationship between SME financing and job creation—over the study period, \$1 million in loans was associated with an average increase per enterprise of 10 to 15 jobs per year—major job growth was concentrated in the high-performing SMEs, demonstrating the gazelle effect (see Figure 4.14).¹¹⁷ Given the caveats mentioned above, this gazelle effect would benefit from further research.

¹¹⁵ Removing outliers for each of the variables was too restrictive. Instead, outliers were removed using the Tukey Method (interquartile range method). Only SMEs that had outliers for at least three or more variables were removed from the dataset, resulting in the 113 observations. To the extent possible, the removal of outliers was limited to avoid ignoring the possibility that the outliers are the rule and not the exception.

¹¹⁶ Additionally, another caveat centers around omitted variable bias in which changes in certain variables may be influenced by indicators not analyzed in the study (e.g. management experience of SME managers and others). The omission of these variables limits statistical inference.

¹¹⁷ Given the distribution of SMEs, this trend of the mean level of key variables being higher than the median continues throughout the analysis.

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

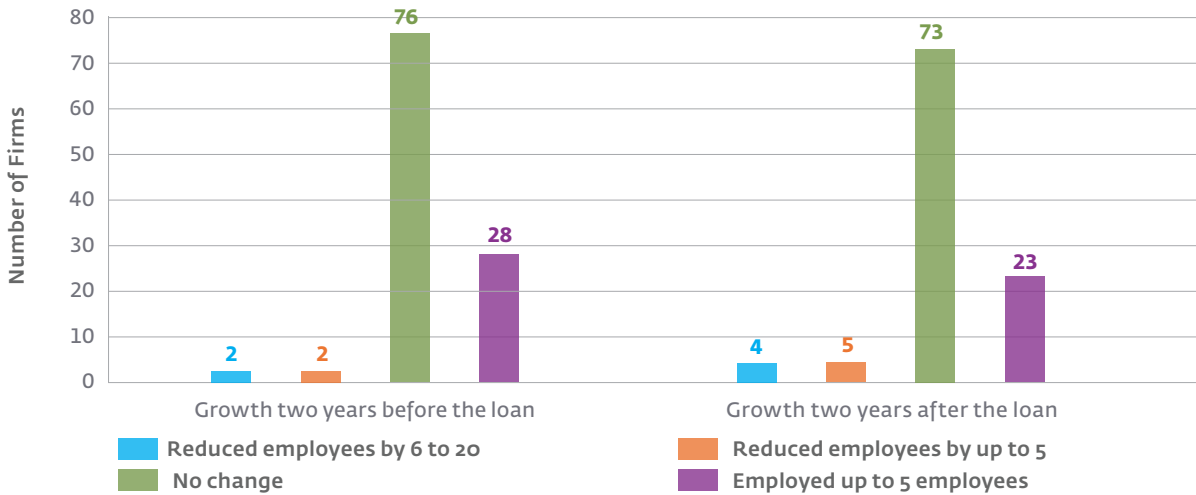


Figure 4.14: Employment growth before and after a loan

Source: IFC-CDC RBL Case Study, 2017.

On average, wholesale and retail trade SMEs experienced 6 percent growth in employment, compared to growth of 4 percent before taking a loan. This is noteworthy because 15 percent of SMEs created 10 or more jobs, compared to 5 percent for the portfolio overall. Only 24 percent of the businesses in the wholesale and retail category created jobs, compared to 28 percent in manufacturing, and 31 percent in services. In comparison with the other sectors, manufacturing benchmarks were smaller, with recent analysis suggesting annual employment growth of between 0 percent and 1 percent in the manufacturing sector between 2013 and 2015. The large variance in employment growth rates before and after the loan (see Figure 4.15) may be a reflection, more generally, of the sector’s cyclical and volatile growth.¹¹⁸

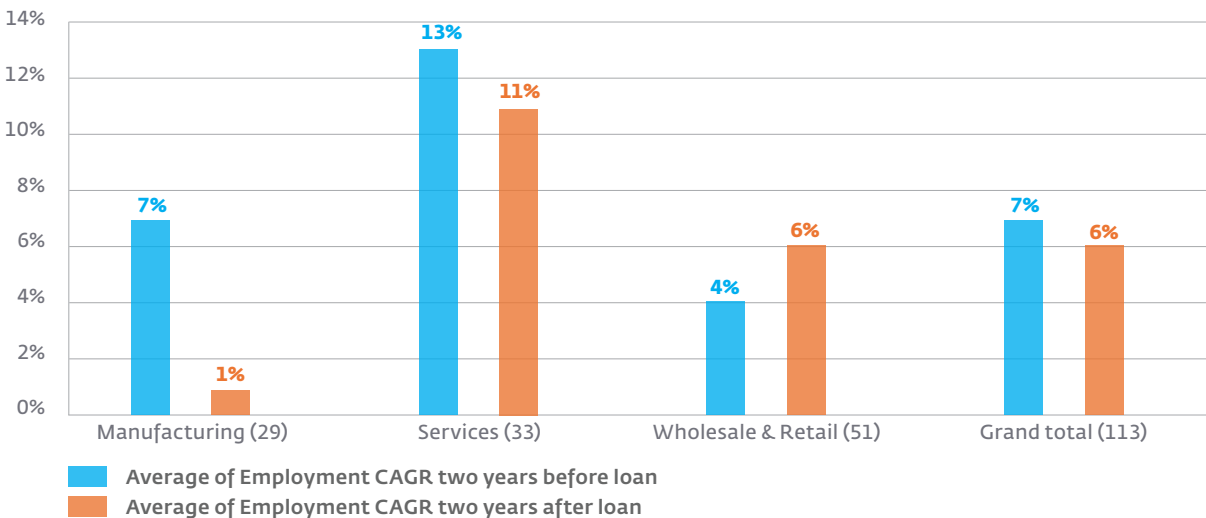


Figure 4.15: Average employment growth by industry

Source: IFC-CDC RBL Case Study, 2017.

¹¹⁸ Thomas, Jayan Jose. 2013. “The crisis in Indian manufacturing.”
Link: <https://www.livemint.com/Opinion/rmpEHAfBfjx08A7sAbP5O/The-crisis-in-Indian-manufacturing.html>

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

Job creation slowed from 13 percent to 11 percent for the RBL client SMEs operating in services, but this still outperforms similar benchmarks of between 6 percent and 10 percent for other cases (see Table 4.5). Furthermore, services' value-addition to GDP in India grew at rates of between 8 percent and 10 percent between 2012 and 2015—higher than manufacturing or aggregated GDP growth over the same period. This partially explains the high job creation rates in the sample for SMEs in services.

SOURCE	YEAR	SAMPLE	ANNUAL GROWTH RATE: ALL SECTORS	ANNUAL GROWTH RATE: MANUFACTURING	ANNUAL GROWTH RATE: SERVICES	ANNUAL GROWTH RATE: WHOLESALE AND RETAIL
World Bank Enterprise Survey, India (SME)	2010–13	6,997	3.9%	3.2%	3.4%	4.9%
McKinsey Global Institute (All)	2013–15	100,000–150,000 household surveys	1.3%	0.0–1.0%	10% in trade and hotels; 2% restaurants	10% in trade and hotels; 2% restaurants*
Sixth All India Economic Census (All)	2005 and 2013	58.5 million enterprises of all sizes	4.1%	Not available by sector		
Fourth All India MSME Survey	2012–13 (estimated)	MSMEs	4.9%	Not available by sector		
	2001–06 (actual)	MSMEs	4.4%	3.7%	6.8%	6.8%**
Average			3.7%	2.5%	5.6%	5.6%

Table 4.5: Job creation benchmarks

Source: IFC-CDC RBL Case Study, 2017.

* Most comparable sector for which data are available.

** Same as services as data does not cover wholesale and retail sector.

The workforce of the young firms (those aged five years or less) grew the most after receiving their loans (12 percent). However, this category has the highest degree of variation, suggesting greater volatility among the youngest firms. The literature suggests that young firms (along with their counterparts in the “small” category) are also more vulnerable to job destruction, in line with SMEs' generally low survival rates.¹¹⁹

Employment in micro and small firms tends to increase at a faster rate (6 percent and 8 percent, respectively) than their larger, medium-sized counterparts (2 percent). In addition, 21 percent of microenterprises and 46 percent of small businesses created jobs, compared with just 8 percent for medium-sized businesses. In terms of business performance, average sales grew at a rate of 9 percent per year, net income at an average of 10 percent per year, and assets at an average of 7 percent per year.

¹¹⁹ World Bank (2014). “The Big Business of Small Enterprises: Evaluation of World Bank Experience with Targeted Support to Small and Medium-Size Enterprises, 2006-12”, citing Ayyagari, Demirgüç-Kunt, and Maksimovic (2014); Hsieh and Klenow (2014); and Klapper and Richmond (2011).

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

Manufacturing SMEs led in sales growth, growing at an average rate of 13 percent after taking the loan (see Figure 4.16). On a macro level, the services segment experienced higher rates of growth compared to GDP. In the survey, however, only small services businesses outperformed the services sector as a whole in terms of contribution to GDP. In the sample, the services segment underperformed, while manufacturing, wholesale, and retail businesses grew in line with (or outperformed) the market. There was less variation in income growth: manufacturing again led the way with 11 percent average growth, followed by services (10 percent), and wholesale and retail (9 percent).

After receiving the loan, assets grew at 7 percent annually, with manufacturing SMEs investing the most in assets, at a rate of 9 percent per year. Medium-sized manufacturing enterprises significantly outperformed benchmarks, with asset growth of 22 percent.

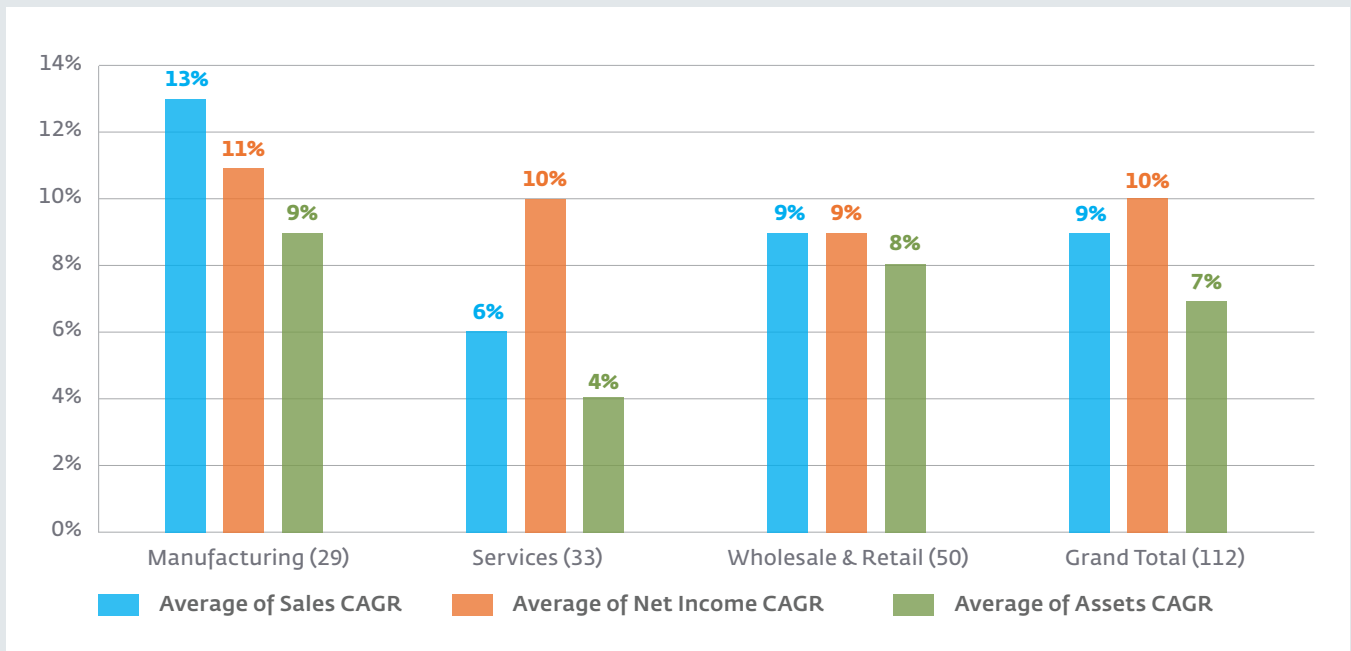


Figure 4.16: Average % growth in sales, net income, and assets by sector (CAGR two years after loan approval)

Source: IFC-CDC RBL Case Study, 2017.

KEY GENDER TAKEAWAYS

- 24 percent of the new jobs created were for women.
- 14 percent of the MSMEs had female owners (in line with national averages).
- 22 percent of the SMEs had women involved in day-to-day management.

About 24 percent of jobs created went to women, at an average annualized growth rate of 4 percent. This result is slower than the annual rate for total job creation (6 percent).

In addition, 63 percent of firms in the sample had no female workers at the time of the loan—and this proportion did not change following the loan.

CASE STUDY 4.3: RBL BANK LIMITED (INDIA)

However, the local context needs to be considered. India’s female labor force participation experienced a sharp decline from 2005 (37 percent) to 2012 (27 percent). Since then, women’s labor force participation has remained at much the same level.

Promisingly, however, 22 percent of SMEs in the RBL sample had female management, and the female workforce in these businesses grew by an annualized rate of 13 percent—more than double the overall female job creation rate (see Table 4.6).

	RESULTS ACROSS ALL SMEs (CAGR SINCE LOAN)	SMEs WITH FEMALE OWNERSHIP (CAGR)	SMEs WITH WOMEN IN MANAGEMENT POSITIONS (CAGR)
Employment	6%	6%	8%
Female employment	4%	11%	13%
Sales	9%	17%	11%
Income	10%	8%	13%
Assets	7%	13%	9%

Table 4.6: Comparison of results highlighting gender diversity

Source: IFC-CDC RBL Case Study, 2017.

Nevertheless, 78 percent of SMEs had all-male management; and, on average, they reduced their female staff. Only two SMEs with all-male management created jobs for women.

Only about 4 percent of the RBL SMEs had majority female ownership—below the national averages of 14 percent for formally registered SMEs, and 9 percent for unregistered SMEs. Fourteen percent of the SMEs had some form of female ownership, including women who had co-signing authority, or had their names on business registration documents.

Despite the small sample, on average, SMEs with female management created more jobs, particularly for women.

They also outperformed in sales, income, and asset growth—supporting evidence that gender diversity can enhance business performance.



Summary

The overall results of the case study point to a good outcome:

- The RBL SMEs increased their assets, income, and sales at annualized rates of between 7 percent and 10 percent after getting the loan, and they generally outperformed (or at least performed in line with) market growth.
- Sixty-nine percent of SMEs also increased their productivity, growing by an average of 6 percent since the loan. Over half of the SMEs were first-time borrowers of formal finance, having previously relied on personal finances, family and friends, or money lenders.
- The study found a significant relationship between SME financing and annual change in employment, with regression analysis indicating that, on average, SMEs created between 10 and 15 jobs per year per \$1 million of RBL financing. Between December 2013 and December 2016, RBL increased its financing to SMEs from \$301 million to \$841 million. This has created between 5,600 and 7,200 new jobs in the SMEs, plus additional jobs in their supply chains and through workers spending their wages.

Financial intermediaries such as RBL, which provide access to finance for SMEs, can have a significant impact on improving financial inclusion, contributing to job creation, reducing the size of the MSME gap, and positively affecting SME financial performance. DFIs should continue to support financial intermediaries that help SMEs grow and realize their potential to impact both employment and economic growth.



CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

In Bangladesh in 2006, IFC began supporting Eastern Bank Limited (EBL) with advisory services and investments that have enabled it to expand its MSME banking business.

Based on data from a treatment group (8 percent of which comprised woman-owned firms) and a control group (MSMEs that never received a loan), the team working on this study extrapolated that for every \$1 million loaned:

- *The medium-term impact on employment would be 7.4 jobs per year (over a three-year period).*
- *The long-term impact (2010 to 2016) would be 8.1 jobs per year.*

The team also found that MSMEs with EBL loans created more jobs than those in the control group—4.32 percent CAGR versus 2.06 percent CAGR for 2010 to 2016.

EBL's SME banking portfolio has become a major business line, and the bank is now one of the strongest providers of MSME finance in Bangladesh. Its lending to SMEs grew by an average of 56 percent year-on-year from 2010 to 2015, while SME deposits during this time grew by an average of almost 88 percent year-on-year.

This is the first IFC study of its kind to follow SMEs over a six-year period, starting in 2010, with surveys in 2013 and 2016.

It shows what EBL and its clients were able to achieve despite the political and macroeconomic problems experienced in 2013 and 2014. In doing so, it underscores the importance of improving the capacity of financial institutions such as EBL to reach SMEs and create jobs.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

This case study drew on data from 126 current and former¹²⁰ EBL clients (the treatment group) and 74 MSMEs that had never had bank financing. The team conducted 200 interviews with 55 current EBL clients and drew on data from 71 former EBL clients interviewed in 2013 for the IFC tracer survey (these two comprise the treatment group). The team also conducted interviews with the 74 MSMEs that had never had a bank loan (the control group).¹²¹

Several criteria were used to ensure that the control group MSMEs resembled those in the treatment group. The businesses were:

- of similar age
- of similar size in terms of sales, assets, and number of employees
- in the same industry
- in the same geographic location
- had a similar number of female-owned and/or female-managed MSMEs
- at a similar stage of credit readiness

When interpreting the results, a few things should be noted:

- In the last quarter of 2013 and the first half of 2014 many businesses suffered heavy losses due to disruptions caused by political turbulence.
- As part of the quality assurance exercise, some discrepancies were found when comparing 2010–2012 data (collected in 2013) with the same data collected in 2016, particularly for jobs and assets.



- The analysis uses baseline data from 2010 and endline data from 2016, which includes data for both the treatment and control groups. The authors collected data in 2013, but they were not used because the data only focused on the treatment group.
- The total effects on key variables cannot be attributed solely to the loans obtained, or to IFC's engagement with EBL.

Over the study period from 2010 to 2016, MSMEs in the treatment group created more jobs (4.32 percent CAGR) than firms in the control group (2.06 percent CAGR).

¹²⁰ Some clients from the 2013 survey were no longer banking with EBL in the 2016 survey. Some had moved to other banks or gone out of business, for example.

¹²¹ The control group MSMEs was selected from amongst businesses that needed loans but had not as yet received any. Although challenging, interviewers were asked to ensure that the potential control group MSMEs were engaged in similar types of businesses as the treatment group. Furthermore, interviewers strove to ensure that the control group entities had a similar age, size, industry, location, and number of women-owners as the treatment group.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

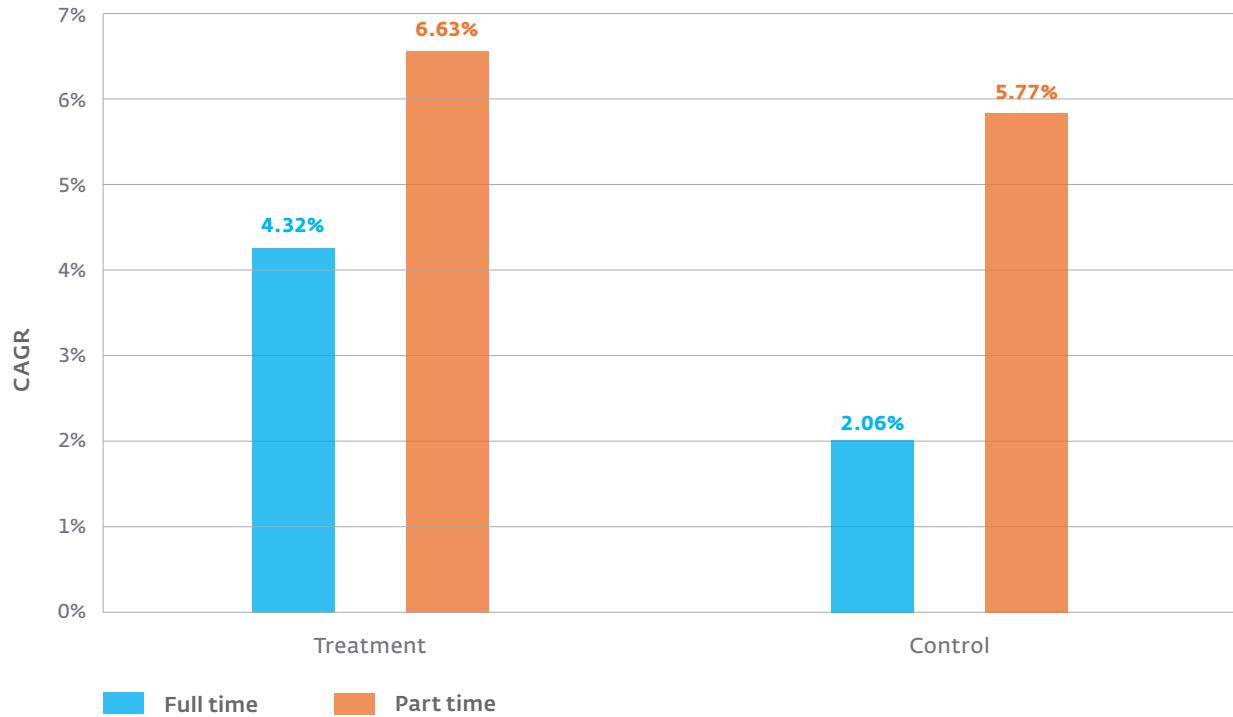


Figure 4.17: Job growth (CAGR)

Source: Authors, based on analysis by the IFC-Infiniti Team.

The growth of full-time employment was consistently higher for the treatment group than for the control group, except for 2013–14, which, as previously noted, was a period of political uncertainty and economic disruption (see Figure 4.18). This appears to have affected the MSMEs with debt more adversely than those with no debt. During the crisis, Bangladesh Bank rescheduled loans to help indebted businesses cope.¹²²

¹²² It should be noted that banks, like other businesses, inevitably react to downturns. Although “black swan” events cannot be predicted (especially in some developing countries, where political and economic uncertainty are the rule rather than the exception), local financial institutions should not be expected to sustain SME lending on their own. A small outcome to note from EBL’s experience, in the context of a downturn, is that DFI engagement with banks matters, not just through providing loans, but also through providing technical assistance in areas such as risk mitigation tools and procedures. Equipped with these tools, client institutions have a greater chance of promoting development during both the good times and the bad.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

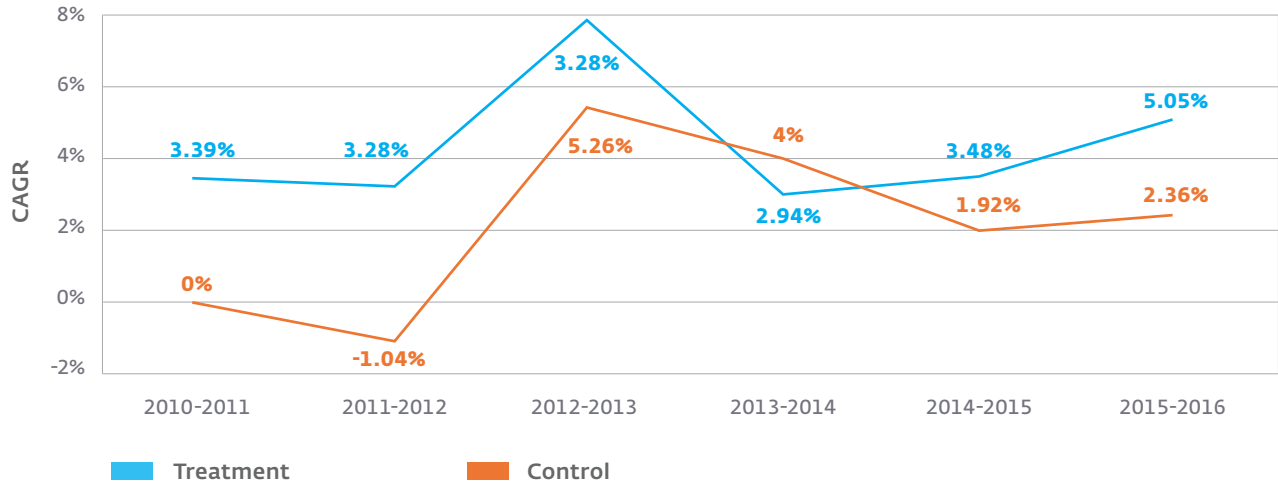


Figure 4.18: Treatment group vs. control group jobs (CAGR)¹²³

Source: Authors, based on analysis by the IFC-Infiniti Team.



¹²³ The 2013–2014 period of disruption appears to have impacted MSMEs with debt more adversely than those without, as reflected in the treatment group's job growth compared to that of the control group during that period of time.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)



Although manufacturing had a higher growth rate (11.23 percent CAGR) than the trading sector (3.23 percent),¹²⁴ the latter had the most jobs in absolute terms due to the high proportion of trading sector SMEs that were interviewed for this study (see Figure 4.19).

The trading sector's 167 wholesale and retail MSMEs—of which 101 were in the treatment group—created 155 jobs (97 of which were in treatment group MSMEs).

By comparison, the 14 manufacturing businesses (eight of which were treatment group MSMEs) created 41 jobs (36 of

which were in treatment group MSMEs).

However, given that trading is the largest sector in Bangladesh's economy, the fact that there was also growth in the manufacturing sector is noteworthy—particularly as this sector was working to improve labor standards at the same time.

In the services sector there were 28 MSMEs (13 of which were in the treatment group). Of the 25 jobs created by services sector MSMEs, all were in the treatment group (see Figure 4.20).

¹²⁴ More than 80 percent of the MSMEs interviewed for this study comprised wholesale and retail enterprises, hereafter referred to as the trading sector.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

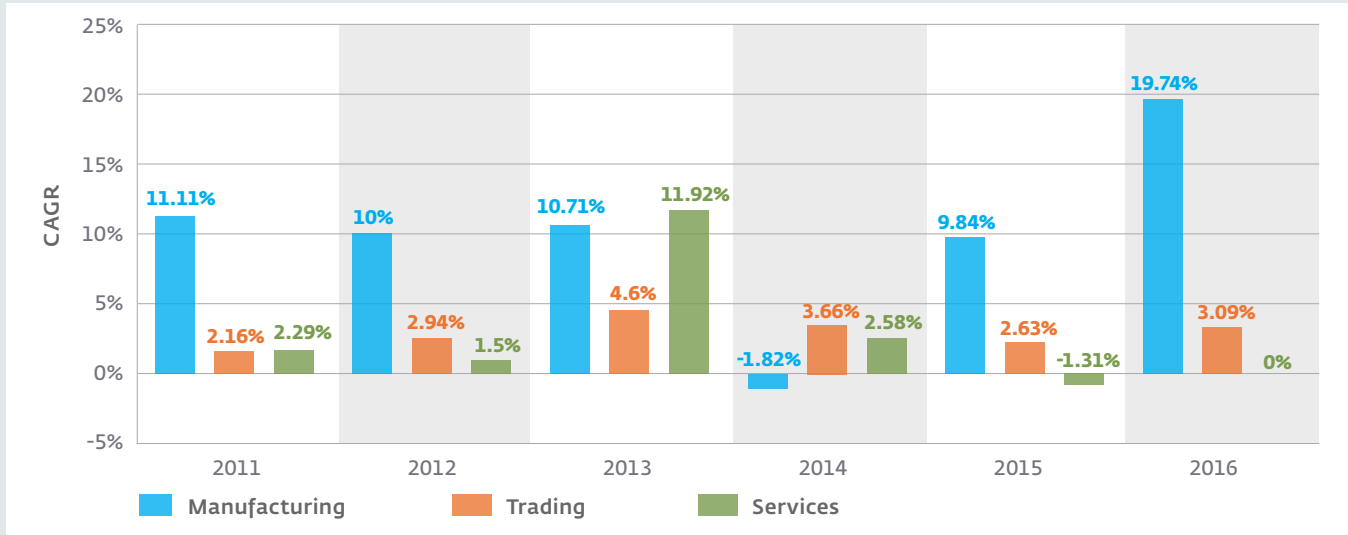


Figure 4.19: Employment growth by sector

Source: Authors, based on analysis by the IFC-Infiniti Team.

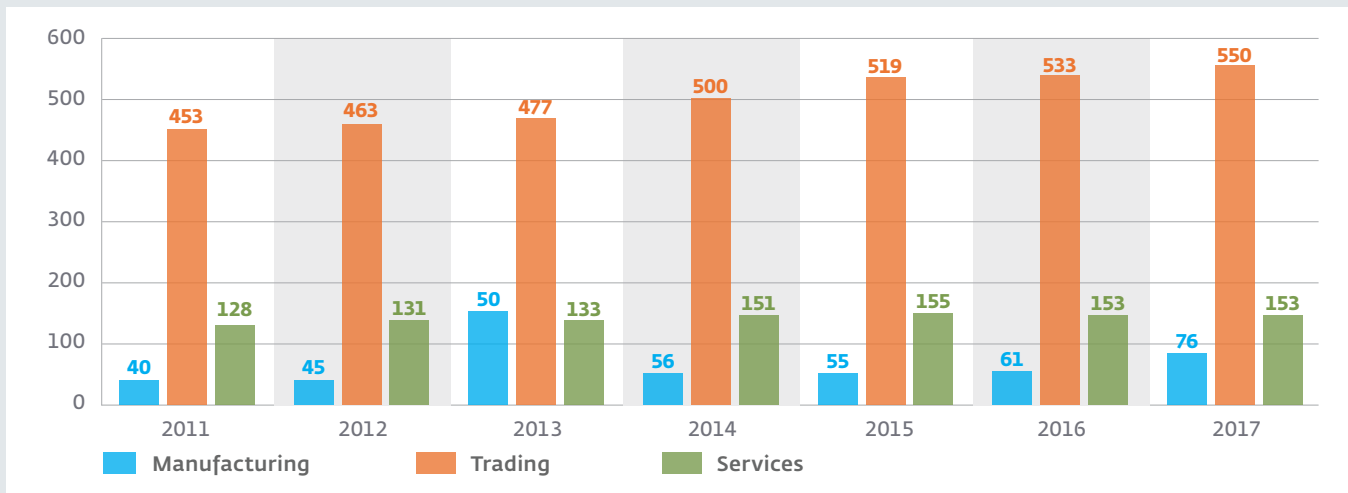


Figure 4.20: Number of jobs created by sector

Source: Authors, based on analysis by the IFC-Infiniti Team.

Investment in **additional fixed assets** had the highest job growth (7.5 percent CAGR), compared to MSMEs that used their loan for other purposes.

As seen in Figure 4.21, the relationship between MSME job creation and the purpose of a loan suggests that the four main

drivers of job creation were loans taken for investment in:

- fixed assets (7.5 percent CAGR)
- inventory financing (2.62 percent CAGR)
- refinancing (1.82 percent CAGR)
- new product development (1.93 percent CAGR)¹²⁵

¹²⁵ Although loans taken to increase employees' pay had a large impact on job growth, these loans were also associated with a negative impact on asset growth (negative 4.25 percent CAGR). Furthermore, this result applied to only one MSME retail enterprise (a gift store) that also used the loan for other purposes. Loans taken to hire new employees had a lesser impact because this purpose was mentioned by only one enterprise for a loan taken in 2016, and so the full impact of this kind of loan has likely not been factored in. Firms that took loans to meet day-to-day operations had relatively low job growth.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

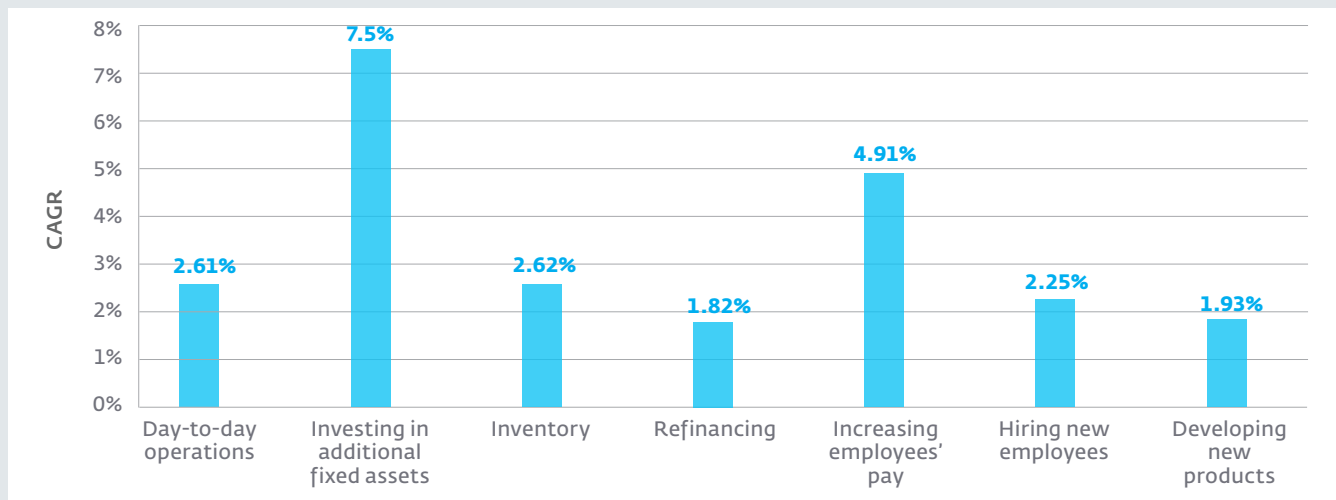


Figure 4.21: Job growth by purpose of the loan taken

Source: Authors, based on analysis by the IFC-Infiniti Team.

Although the overall rate of job creation was higher for male-owned firms than for female-owned firms, it is worth noting that the latter created more jobs for women (2.46 percent CAGR)—compared to a decline of 1.50 percent for women working in male-owned firms (Figure 4.22).

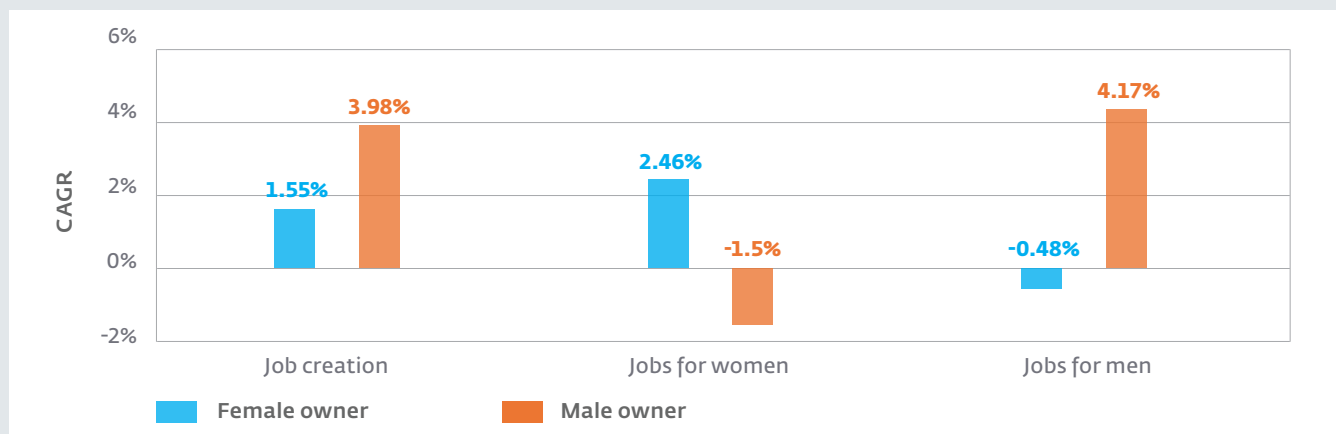


Figure 4.22: Job creation by gender of ownership

Source: Authors, based on analysis by the IFC-Infiniti Team.

Although female-owned enterprises accounted for just 8 percent of the treatment group, the status of Bangladeshi women in the workforce has improved. Policies such as promoting female enrollment in education and encouraging private sector initiatives in microfinance are reinforcing women's workforce participation at a time of ongoing economic diversification, growth in manufacturing, and changing social norms. As new industries grow (or women gain access to current ones), women will likely gain new opportunities to join the workforce or start their own businesses in the future (ADB 2016).

In terms of asset growth, female-owned MSMEs fared better than their male-owned counterparts, with the former experiencing a CAGR of -0.85 percent, against -4.79 percent for MSMEs owned and managed by men (Figure 4.23). Also, female-owned and managed businesses seem to have suffered less during the national turmoil of 2013–14 (although this could be explained, in part, by the fact that there were fewer women-owned firms to begin with).

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

In terms of asset growth, female-owned MSMEs fared better than their male-owned counterparts, with the former experiencing a CAGR of -0.85 percent, against -4.79 percent for MSMEs owned and managed by men (Figure 4.23). Also, female-owned and managed businesses seem to have suffered less during the national turmoil of 2013–14 (although this could be explained, in part, by the fact that there were fewer women-owned firms to begin with).

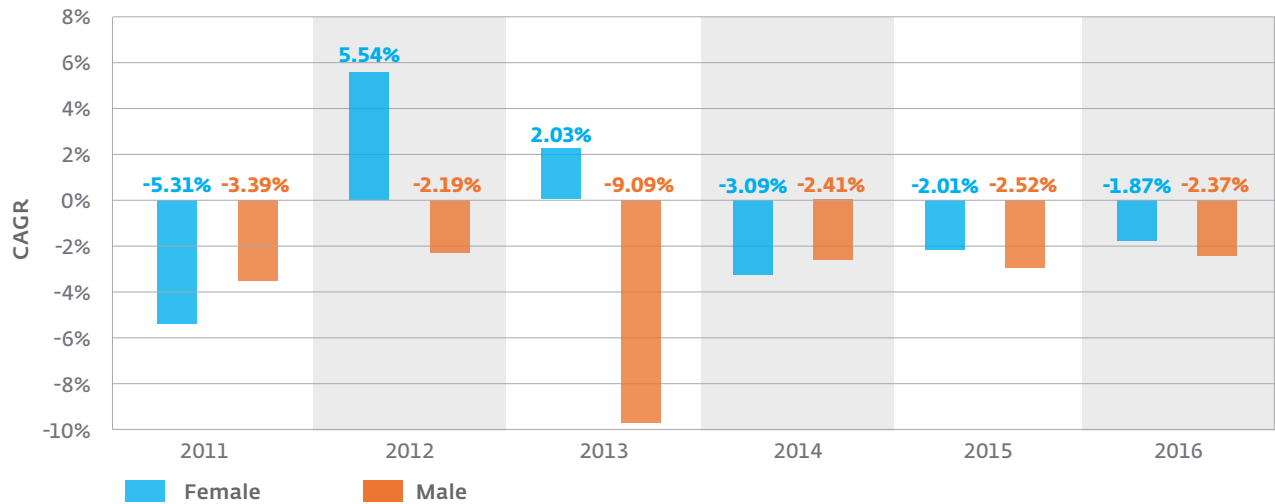


Figure 4.23: Asset growth by gender of the primary owner

Source: Authors, based on analysis by IFC-Infiniti Team.

In terms of sales growth, male-owned MSMEs generally fared slightly better than female-owned MSMEs, with a CAGR of -2.01 percent versus a CAGR of -3.41 percent between 2011 and 2016 (see Figure 4.24). However, the average year-on-year real sales were higher for female-owned enterprises (\$586,274) than for male-owned ones (\$517,004).

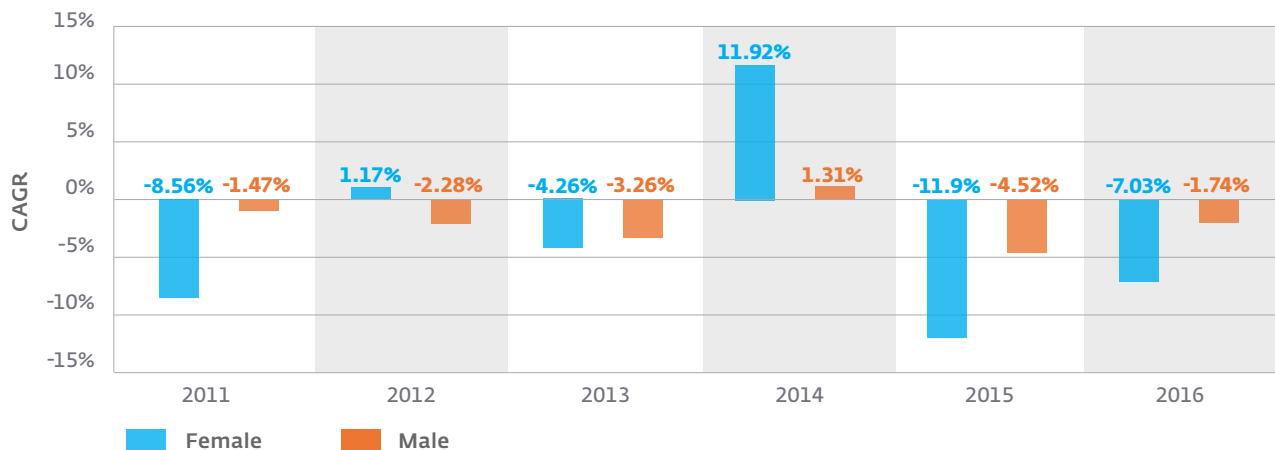


Figure 4.24: Sales growth by gender of the primary owner¹²⁶

Source: Authors, based on analysis by IFC-Infiniti Team.

¹²⁶ Although the crisis was in 2013–14, MSMEs across the economy struggled with debt and the impact of inflation beyond 2014, as reflected in the results in this and other figures.

CASE STUDY 4.4: EASTERN BANK LIMITED (BANGLADESH)

Bangladesh Bank data (2015) show that only about 4 percent of MSME loans extended by the entire financial sector were made to female-owned enterprises. But EBL appears to have made female-owned businesses a focus area, having financed just over 12 percent of all such MSMEs, in comparison to the 54 financial institutions that received refinancing from Bangladesh Bank. Women SME owners' continued engagement with financial institutions such as EBL could go a long way toward helping women participate in a more stable workforce. About 89 percent of all the jobs created by the MSMEs interviewed for this case study were created by MSMEs with at least one loan. Women represented 8 percent of all the MSMEs that had taken an EBL loan.

The political and economic turmoil of 2013–14 saw many businesses experiencing a slowdown in sales, struggles with

debt, and inflationary impact beyond 2014. To help them cope with these challenges, Bangladesh Bank rescheduled its MSMEs' loans.

Despite all these difficulties, MSMEs' full-time employment did increase, albeit by a small amount (4.32 percent for treatment group MSMEs, and 2.06 percent for control group MSMEs). These data suggest that financing had a small but positive impact on job creation. A total of 196 jobs were created between 2010 and 2016 by the 126 MSMEs that received EBL financing in 2010. Most of these MSMEs were wholesale and retail establishments that are, in general, not expected to be major job creators. While other cases may show stronger effects, the case of EBL demonstrates how important it is for DFIs providing finance in Bangladesh to maintain their engagement with financial institutions such as EBL.



CASE STUDY 4.5: CRDB BANK (TANZANIA)

In Tanzania, IFC has supported CRDB Bank since June 2014 with a \$40 million SME senior loan, a \$25 million Global Warehouse Finance Program loan, and a \$10 million Global Trade Finance Program line. This support was further reinforced by IFC Advisory Services.

Extrapolating results from 100 SMEs whose loan files were reviewed during the appraisal, 1,188 jobs were supported in 2014—with 433 of these jobs in female-owned SMEs.

The expanded appraisal of CRDB gave the following results:

- *Medium-sized enterprises accounted for 53 percent of overall jobs supported, employing the largest number of workers when compared with other SME classifications.*
- *Formal SMEs supported had more employees than other types of companies (601 employees).*
- *Firms owned by individual entrepreneurs (sole proprietors) showed the highest average employment per firm (45 employees).*
- *Investment loans supported the greatest number of jobs: 693 employees, or 58 percent of total employment.*

The methodology used in this case study included statistical analysis based on primary and secondary sources. The IFC case study team drew a stratified random sample of 100 SMEs that received loans from CRDB in 2014. (These had characteristics representative of the general population of 287.)¹²⁷ Then, based on a loan file review (baseline), the team collected data on key characteristics of SMEs: jobs, assets, sales, ownership, and whether the SMEs were start-ups. It should be noted that, in this case study, the assessment only covers the baseline. Once IFC obtains end-line data, it will then be possible to extrapolate job creation from a regression.¹²⁸

Labor-intensive sectors such as agriculture, together with larger non-agricultural businesses, supported the greatest number of jobs per firm.

The average number of workers employed per firm was highest among medium-sized enterprises as a group (Figure 4.25)—with agriculture leading the way, followed by the hotels and restaurants sector (Figure 4.26).¹²⁹

¹²⁷ Sampling done by Stratified random sampling based on population characteristics of CRDBs portfolio as of Dec 2014. Very small enterprises: Loans less than \$10,000; small enterprises: Loans between \$10,000 and \$100,000; and medium enterprises: Loans between \$100,000 and \$1 million (using 2014 exchange rate of \$1 = 0.00054 TZ).

¹²⁸ This analysis extrapolated to jobs supported by CRDB's total loan portfolio. Without endline data, the authors cannot yet estimate job creation.

¹²⁹ While other cases did not cover agriculture, and the main methodology of this paper does not include agriculture in its analysis, it was difficult to disaggregate from CRDB's results since the agriculture sector accounts for 15 percent of the portfolio.

CASE STUDY 4.5: CRDB BANK (TANZANIA)

Very small enterprises and the wholesale and retail (small) sector employ the lowest number of workers per firm. Between them, the hotels and restaurants sector (34 percent) and the agriculture sector (21 percent) provided the largest numbers of jobs.

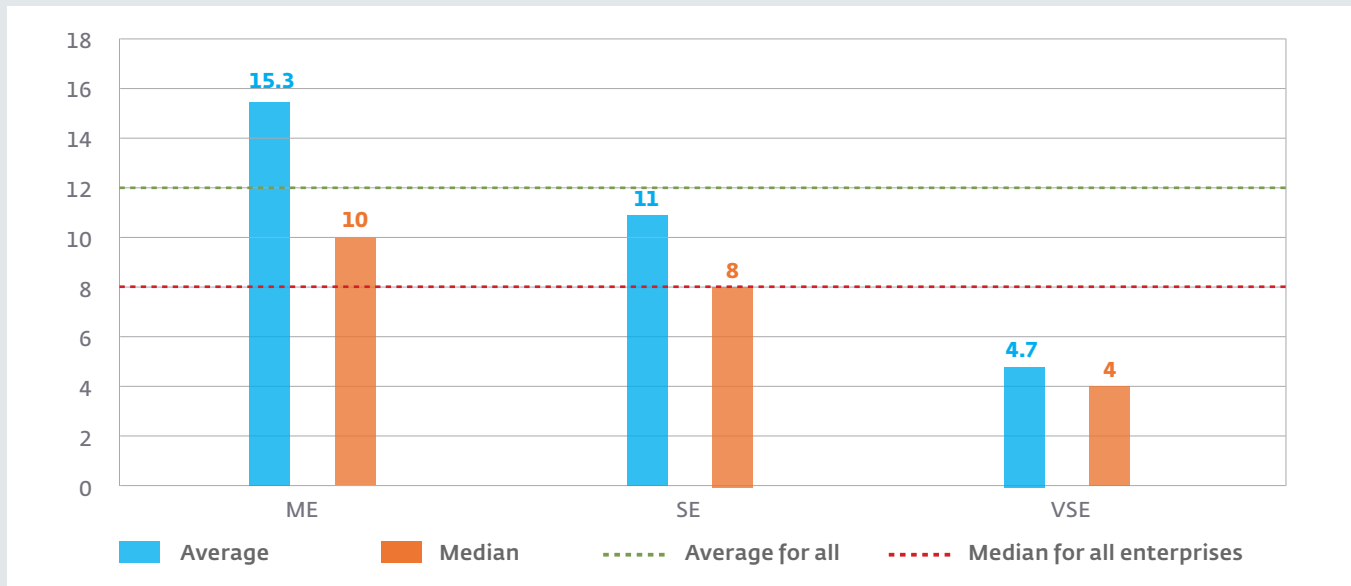


Figure 4.25: Average/median number of employees by enterprise

Source: IFC FIG Expanded Appraisal of CRDB.

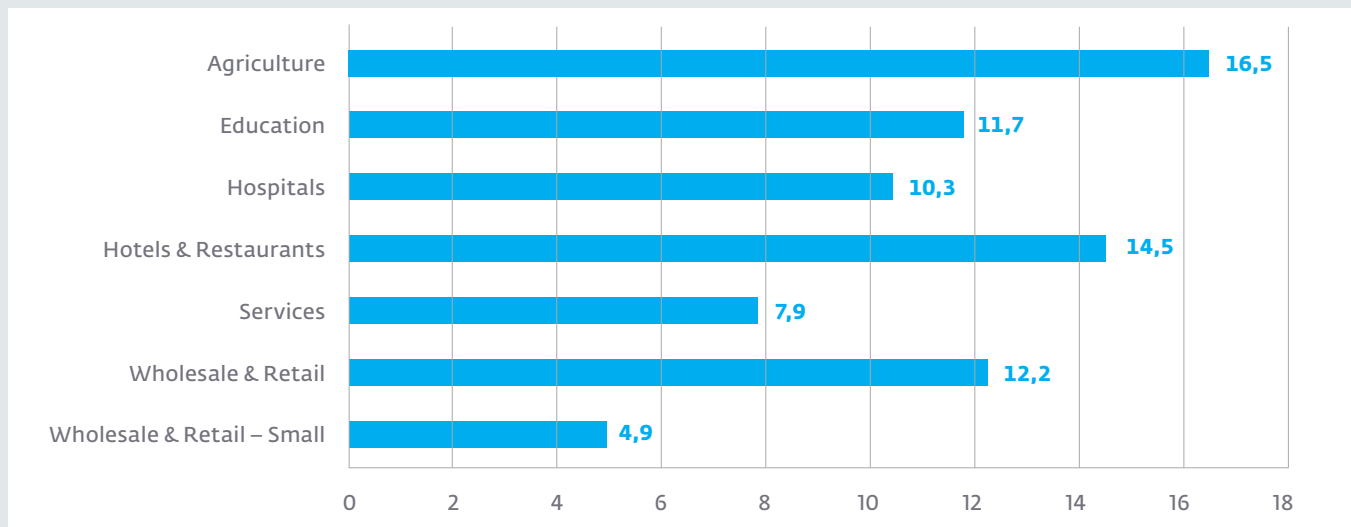


Figure 4.26: Average number of employees per enterprise by sector

Source: IFC FIG Expanded Appraisal of CRDB.

ME = medium enterprises, SE = small enterprises, VSE = very small enterprises.

Due to their larger size, medium-sized enterprises accounted for 53 percent of overall employment in CRDB's SME client sample. Among medium enterprises and very small enterprises, the hotels and restaurants sector employed the most workers. Among small enterprises, the agriculture sector employed the most. The hospital sector employed the fewest workers because its high-skilled labor is costly compared to other sectors such as agriculture (see Figure 4.27).

CASE STUDY 4.5: CRDB BANK (TANZANIA)

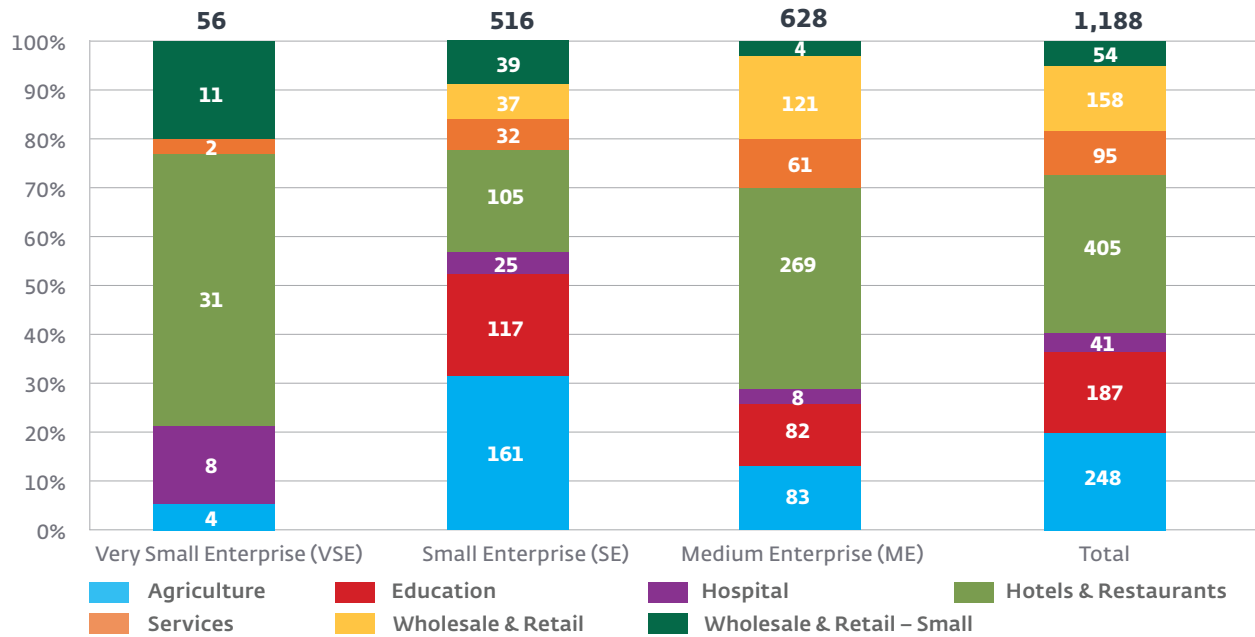


Figure 4.27: Number of employees based on size of enterprise

Source: IFC FIG Expanded Appraisal of CRDB.

Formal companies supported more than half of the jobs, although the firms of individual entrepreneurs (sole proprietors) showed the highest average employment per firm. Forty-five percent of loans went to formal companies. In Tanzania, in 2015, there were only 156,000 formal SMEs, contributing 27 percent to GDP and employing 5 million people. CRDB's support to formal firms is likely to result in a significant contribution to both GDP and jobs.

As seen in Figure 4.28, the formal sector employed the highest number of workers (601 in 2014), with the informal sector the lowest (171). Because the larger companies were formally registered, they were able to bear the cost of registering a business, and paying taxes and trade union wage rates, while enjoying the benefits of formalization such as enforceable contracts, tax breaks, and incentive packages.

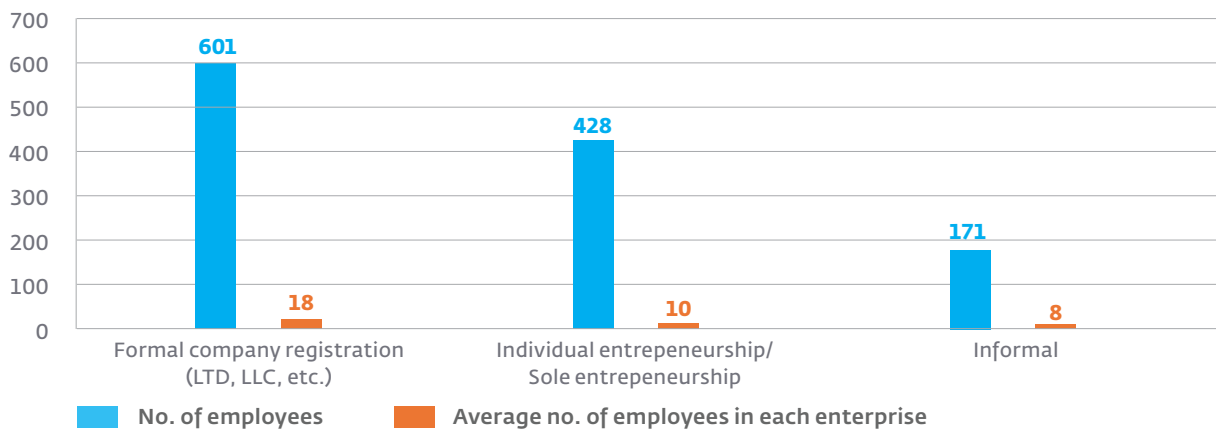
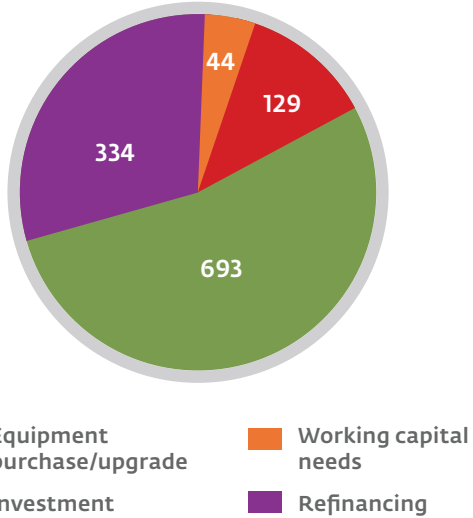


Figure 4.28: Employment in formal/informal enterprises¹³⁰

Source: IFC FIG Expanded Appraisal of CRDB.

¹³⁰ The "informal" category looks at unregistered businesses.

CASE STUDY 4.5: CRDB BANK (TANZANIA)



Numbers in chart correspond to total number of employees in each category.

Figure 4.29: Job concentration by purpose for CRDB loan

Source: IFC FIG Expanded Appraisal of CRDB.

Investment loans support most jobs. Employment in firms that used their CRDB loans for investment (non-equipment assets) comprised 58 percent of total employment, as the loans were used for expansion (see Figure 4.29).

Refinancing supported the lowest number of jobs because the firms that took out these loans tended to have more pressing priorities than hiring more workers. Loans for facilities and operations also supported more jobs than refinancing.

Female-owned SMEs supported fewer jobs, although, among these firms, the small enterprises employed the most workers.

Echoing the smaller baseline issue of other cases, female-owned SMEs accounted for 40 percent of the portfolio but supported only 36 percent of total jobs (433 of 1,188).

Of the woman-owned firms, small enterprises employed the most people (see Figure 4.30).

Female-owned firms supported 176 of 628 jobs in medium enterprises, 248 of 516 jobs in small enterprises, and 18 of 56 in very small enterprises. Overall, 918 to 1,268 jobs were supported by the woman-owned SMEs that took out loans from CRDB in 2014.



Photo Credit: UN Women Flickr account

CASE STUDY 4.5: CRDB BANK (TANZANIA)

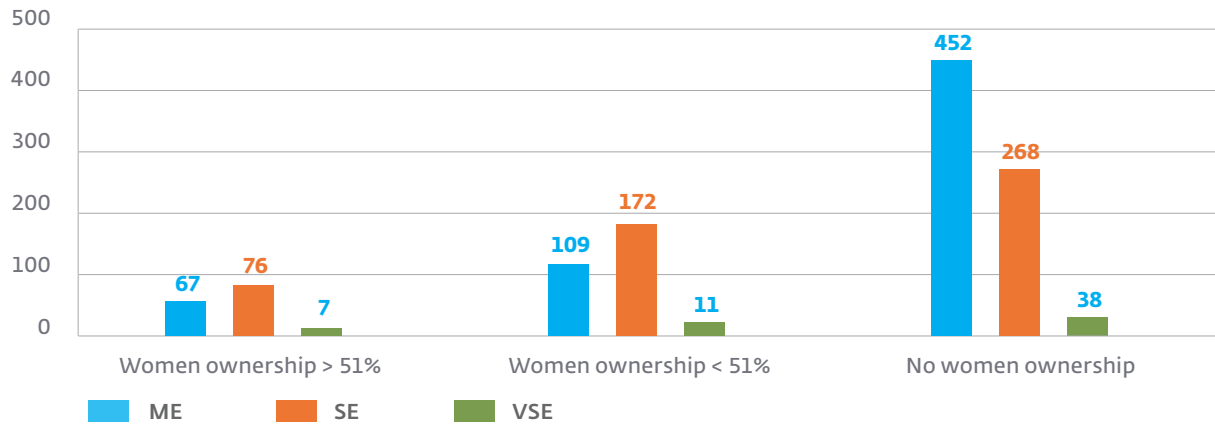


Figure 4.30: Number of employees in female-owned enterprises

Source: IFC FIG Expanded Appraisal of CRDB.

Regarding equity and income effects: (i) medium-sized and small enterprises had greater net income and sales, (ii) there was a large difference in net income for small and very small enterprises. The wholesale & retail (small) sector had the lowest average equity. Equity in medium-sized enterprises and firms that were not woman-owned was the highest.

Hospitals were attractive borrowers because their average differences in assets and liabilities were the largest. Although they hired the fewest people (see Figure 4.27), the extent to which they provide effective and accessible health services can be counted as a factor in promoting social and economic development.

Further collection of data will help deliver a clearer picture of CRDB's effects on SME job creation. Given the bank's reach in Tanzania, it has an important role to play in stimulating further job creation.



Photo Credit: UN WOMEN, 2018

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

In Bolivia, IFC's relationship with Banco Ganadero began in 2009, with an approved Global Trade Finance Program line that supports operations for up to \$5 million. Banco Ganadero has continued to be the most active bank in the program in Bolivia.

The study drew on baseline data from Banco Ganadero's high-quality management information system (MIS) for its SME portfolio of 1,044 firms, supplemented by data collected from a sample of loan files for 116 SME clients that received a loan in 2014.

What emerged was that the SMEs in Banco Ganadero's portfolio supported 17,140 direct jobs,¹³¹ achieved sales amounting to \$1,186 million, and had assets of \$1,027 million.

It was expected that the bank would end up increasing its SME portfolio by about 15 percent per year over the five-year period from February 2015 to February 2020. This would translate into an estimated aggregate increase of 18,750 jobs, and \$1,468 million in sales.

By 2017, the bank had exceeded the 15 percent portfolio growth estimate with a CAGR of 19.82 percent from 2015—which underscores the potential impact of financial institutions' outreach to SMEs.¹³²

The study was based on an 11 percent representative sample from Banco Ganadero's portfolio of active SME clients that received a loan in 2014. This included small firms (companies that received a loan of between \$10,000 and \$100,000) and medium-sized firms with loans of \$100,000 to \$1 million.

The 116 clients selected represented a small enough sample to meet practical constraints, while being large enough to enable meaningful inferences about the population from which the sample was drawn.

Extrapolation for direct jobs and sales supported in the sample for this case used the following methodology:

- Job growth from new SMEs in the portfolio was estimated using 15 percent of estimated portfolio growth per year, while growth in jobs for the SMEs in the portfolio was estimated using the ILO forecast of yearly employment growth in Latin America and the Caribbean (ILO 2014, p 41).¹³³
- Sales growth was estimated using the same approach as that for jobs—but using the World Bank's GDP growth forecast for Bolivia.¹³⁴

¹³¹ The term "jobs supported" refers to the jobs that SME client companies enable. It cannot be assumed, however, that all jobs supported can be attributed to the financial services that Banco Ganadero provided to its SME clients.

¹³² There are two caveats to keep in mind. First, given the nature of the survey, measurement error is a likely issue as clients may be sensitive about reporting information on things such as their assets. Additionally, this study did not take into consideration the growth in reviewed firms' value chains, which could lead to an underestimation of total job growth.

¹³³ As noted earlier, the case studies were developed incrementally and thus did not track the same parameters or follow the same methodologies. This is an issue that IFC is looking to resolve through further standardization.

¹³⁴ Banco Ganadero exceeded the original 15 percent portfolio growth per year, with a CAGR of 19.82 percent from 2015 to 2017.

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

The total effects on employment or sales cannot be attributed solely to the loans obtained, or to IFC's engagement with Banco Ganadero. Once IFC obtains endline data, it will then be possible to extrapolate job creation and sales growth from a regression.

Banco Ganadero's SME portfolio comprises 1,044 firms, including 776 small enterprises and 268 medium-sized ones.¹³⁵ Breaking these figures down in terms of firm size, 11,152 jobs came from small firms and 5,988 came from medium-sized firms. A total of \$766 million and \$420 million in sales came from small and medium-sized firms respectively. Small firms had \$626 million in assets, while medium-sized firms had \$400 million in assets.

Table 4.7 presents the average and median jobs, sales, and assets for Banco Ganadero's SME portfolio.



Photo Credit: Carlos Adampol Galindo, 2008

	JOB	SALES (US\$)	ASSETS (US\$)
Average	16	1,136,123	983,246
Median	7	458,254	467,716

Table 4.7: Jobs, sales, and assets of Banco Ganadero's SME portfolio

Source: 2015 Banco Ganadero Report.

The trade¹³⁶ sector had the highest absolute number of jobs and sales, while agribusiness had the highest absolute value of assets. When looking at firm-level results, manufacturing had the highest average and median job figures, along with the highest median sales (the highest average sales were in trade). For assets, agribusiness had the highest average and median.

¹³⁵ Based on IFC's SME loan size proxy definition: loans of \$10,000 to \$100,000 are to small firms, and from \$100,000 to \$1 million are to medium firms.

¹³⁶ The trade sector includes wholesale and retail enterprises.

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

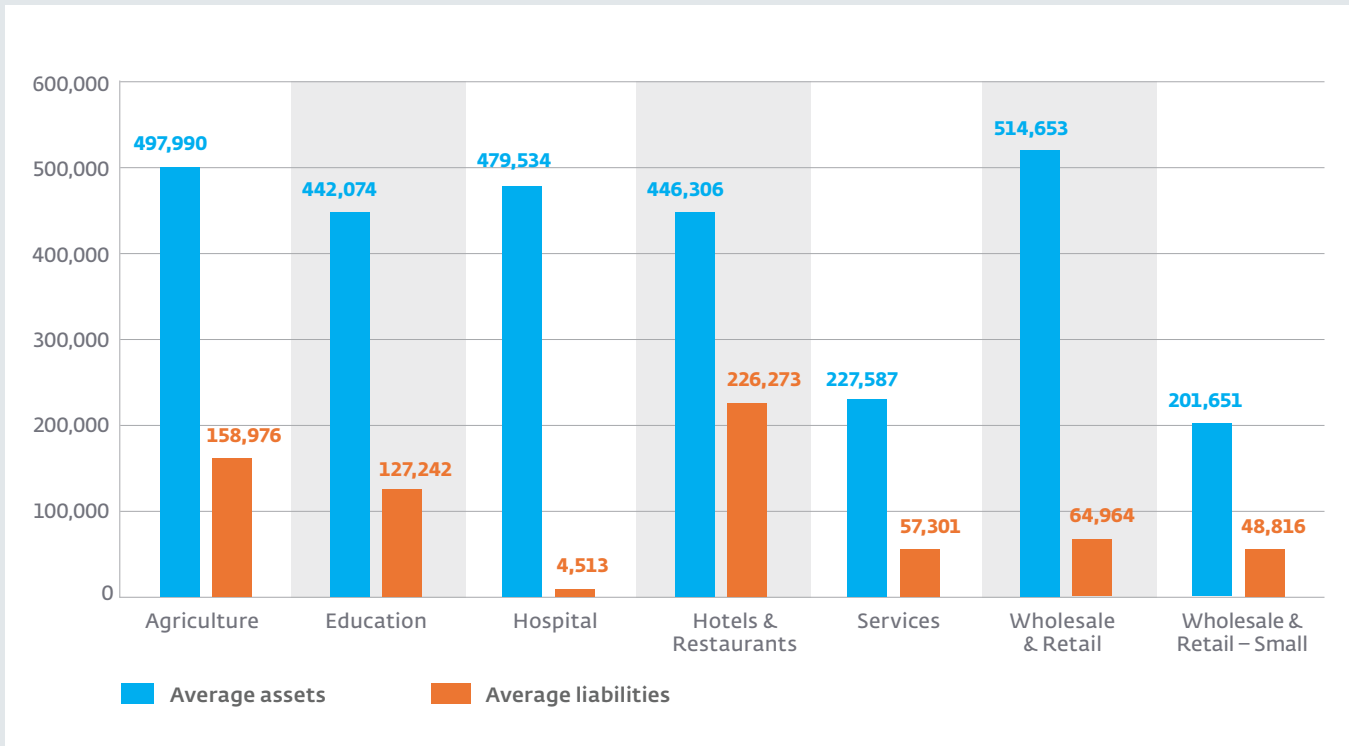


Figure 4.31: Assets/liabilities by sector (US\$)

Source: 2015 Banco Ganadero Report.

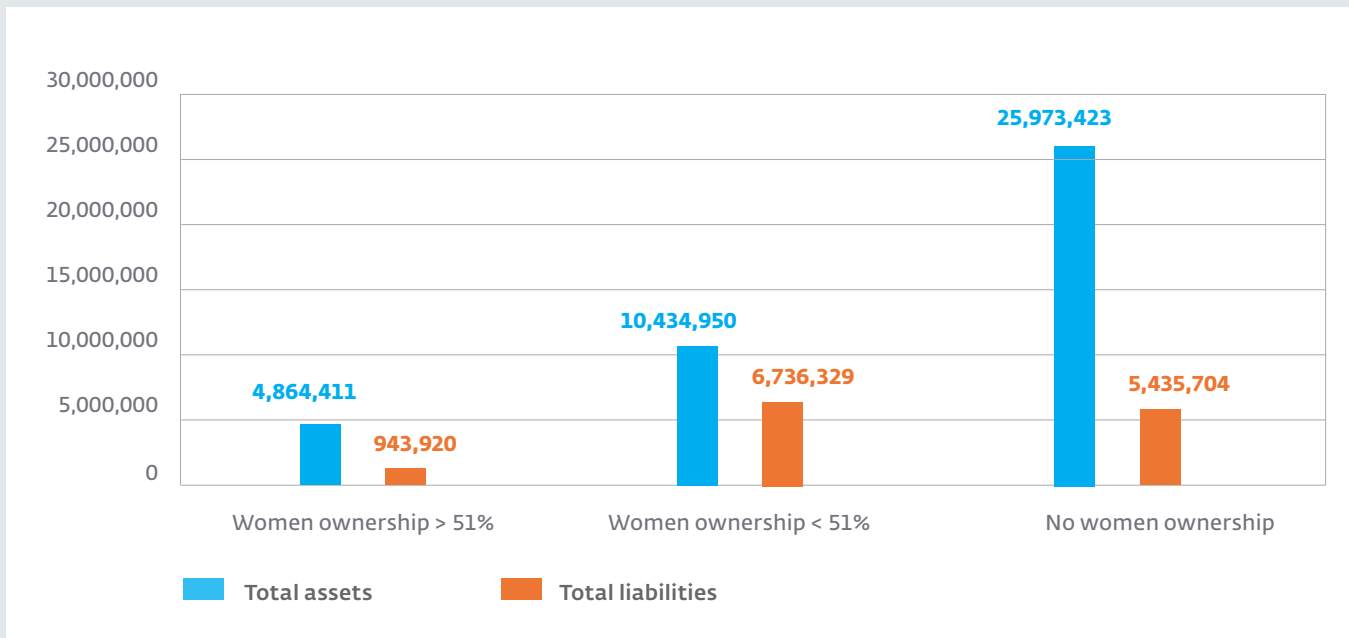


Figure 4.32: Assets/liabilities by ownership type (US\$)

Source: 2015 Banco Ganadero Report.

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

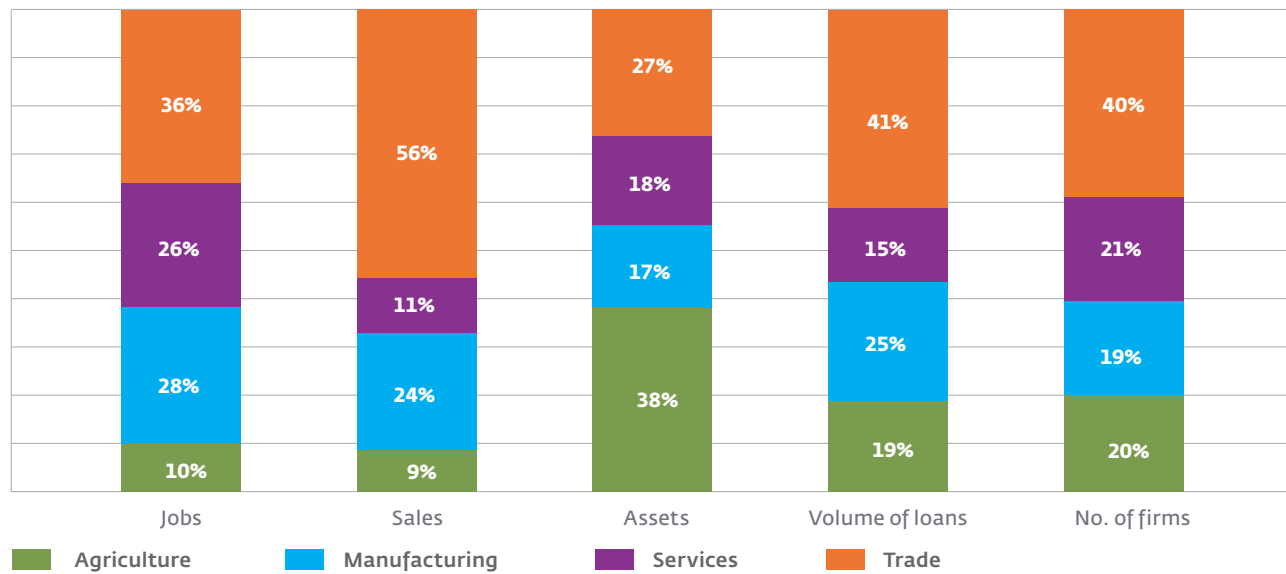


Figure 4.33: Results for the Banco Ganadero sample by key sector

Source: 2015 Banco Ganadero Report.

Although the trade sector supported the most jobs in absolute terms, the sector with the highest number of jobs per firm (average and median) was manufacturing (see Table 4.8). In terms of jobs supported per dollar of financing, SMEs in the services sector supported the most, with 11 jobs supported per \$100,000 of financing.

	NO. OF FIRMS	ABSOLUTE NO. OF JOBS	AVERAGE NO. OF JOBS/FIRM	MEDIAN NO. OF JOBS PER FIRM	TOTAL DISBURSED (\$)	NO. OF JOBS SUPPORTED PER \$100,000 FINANCE*
Agribusiness	208	1,705	8	6	50,509,485	3
Manufacturing	199	4,828	24	11	65,244,784	7
Services	223	4,492	20	7	39,619,450	11
Trade	414	6,115	15	7	106,744,814	6
Total	1,044	17,140	16	7	262,118,533	7

Table 4.8: Jobs supported by sector and per US\$100,000 of financing¹³⁷

Source: 2015 Banco Ganadero Report.

*Assuming 100 percent attribution

¹³⁷ The extrapolation of jobs growth applied the following methodology: jobs growth coming from new SMEs in the portfolio was estimated using 15 percent of the estimated portfolio growth per year. The jobs growth of the existing SMEs in the portfolio was estimated using the ILO forecast of yearly employment growth for Latin America and the Caribbean (2014 Labour Overview, ILO Latin America and the Caribbean, p. 41).

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

Most of the SMEs in the study (55 percent) were mature firms, which supported more jobs, sales, and assets in absolute, average, and median terms.

In 2014, mature firms—those operating for more than 10 years—supported the largest average and median number of jobs per firm (25 and 13 respectively) while new firms and middle-age firms supported an average and median number of jobs of 14 and 8 respectively.

Most firms (53 percent) used their loans for working capital, followed by investment (24 percent). Those firms that used the loan for working capital supported the largest number of jobs (62 percent), had the highest median number of jobs per firm (17), and the second highest average of jobs per firm (24). See Table 4.9 for a breakdown of jobs supported by use of the loan.

PURPOSE OF LOAN	# OF FIRMS	ABSOLUTE # OF JOBS	AVERAGE JOBS PER FIRM	MEDIAN JOBS PER FIRM
Equip. purchase	16	520	33	7
Investment	28	299	11	8
Refinancing	10	88	9	7
Working capital	62	1,500	24	17
Total	116	2,407	21	10

Table 4.9: Jobs supported by use of loan

Source: 2015 Banco Ganadero Report.

Sixteen percent of firms in the sample were female-owned.¹³⁸ 73 percent were small, 74 percent were in the trade sector, and 58 percent were mature, but with consistently lower asset totals than male-owned SMEs (Table 4.10). In total, 79 percent of woman-owned firms had loans in the form of credit lines. Regarding jobs created and the sales of female-owned SMEs, the results were mixed, but the fact that female-owned enterprises had fewer assets could be explained by the fact that the majority of them are wholesalers and retailers in the trade sector.

		JOBS	SALES	ASSETS
Female owners	Average	18	2,110,553	657,902
	Median	11	840,804	393,073
Male owners	Average	21	1,938,762	1,744,351
	Median	10	982,613	846,646

Table 4.10: Key results for female-owned businesses

Source: 2015 Banco Ganadero Report.

¹³⁸ A female-owned firm is one in which 51 percent or more of the firm is owned by a woman.

CASE STUDY 4.6: BANCO GANADERO (BOLIVIA)

As noted above, it was expected that Banco Ganadero would grow its SME portfolio by at least 15 percent per year over the full five-year period that began in 2015.¹³⁹ Between 2015 and 2017, the bank's portfolio grew at a CAGR of 19.82 percent.

This case study offers several key points for consideration: 40 percent of Banco Ganadero's portfolio comprises trade companies, followed by services (21 percent), agribusiness (20 percent), and manufacturing (19 percent). Trade is the sector with the highest absolute number of jobs and sales, while agribusiness has the highest absolute value of assets.

Further research is needed to determine why this is.

When looking at firm-level results, the following features stand out:

- Manufacturing has the highest average and median jobs figures, as well as the highest median sales.
- Trade has the highest average sales.
- Agribusiness has the highest average and median assets.
- Most SME loans are credit lines (66 percent), followed by long-term loans (24 percent).
- Regarding collateral to guarantee a loan, 66 percent of firms used property, 16 percent used moveable assets, 12 percent used deposits, and 5 percent used a combination of property and movable assets.¹⁴⁰



Photo Credit: Adriano Rangel

¹³⁹ Sales growth was estimated using the same approach as for jobs but the World Bank GDP growth forecast for Bolivia was used instead of the ILO jobs growth rate.

¹⁴⁰ Movable collateral includes machinery, livestock, stock, and cars.

SUMMARY CONCLUSIONS— IMPLICATIONS FOR DFIS AND PRIVATE FINANCIAL INSTITUTIONS

IN BRIEF

- This report sheds light on the development impact IFC's clients are making in improving SMEs' access to finance. Although improved access to finance is associated with positive effects on employment, data limitations leave considerable room for further investigation.
- Improved collaboration and in-depth data sharing among DFIs can ensure that financial institutions provide SMEs with better support, with broader spillover effects in developing economies.

This chapter reviews the key points developed throughout this report:

- SMEs face a considerable financing gap that hinders their growth and has negative consequences for job creation and firm productivity. With targeted interventions, private financial institutions can help SMEs by providing them with the finance they need—in an appropriate, consultative, and participatory manner.
- When SMEs have greater access to external capital, they are more likely to create jobs and boost economic growth.
- There are high-growth SMEs across developing countries that are positioned to employ more people and develop markets through their suppliers.
- Women continue to join the workforce as either employees or business owners—a trend that is opening new avenues for both employment growth and innovation.
- The analyses developed in this report found that, over a period of two years, a loan of \$1 million to SMEs in developing countries is associated with the creation of **16.3 additional permanent jobs, per firm** on average—significantly more than those created by comparable firms without access to finance.



Methodological issues

While IFC and other institutions continue to address access to finance for SMEs, there has been a gap in the literature on how to measure key effects such as job creation across a wide span of developing economies.

This study attempts to fill this gap, using multipliers to estimate the effect that financing has on SMEs in different circumstances.

The research underpinning this report was not meant to find a “silver bullet” for SMEs’ development issues. While the results presented suggest that improved access to finance is

associated with positive effects on employment, limitations in the data have not allowed for a full explanation of the underlying mechanisms—leaving considerable room for further investigation.

A more complete picture of the nature of the relationship between finance and employment will require an experimental design that can fully capture the exact effects that better access to finance can have on firms’ job outcomes¹⁴¹—something that would be similar to the approach de Mel et al. (2008) and McKenzie and Woodruff (2008) used for assessing returns on capital.



¹⁴¹The authors did run an estimation method that ignores the data generation and pretends that the firms were the subject of an experiment. The probability of having a loan is first calculated given the observable characteristics. Afterwards, firms with a loan are matched with the ones without (given their Propensity Score to obtain a loan). The average treatment effect is significant and around 2.25. Weights and robust SE are applied. This result, though wrong conceptually due to the data collection process, can serve as anecdotal evidence that a well-designed experiment could produce additional evidence capturing the exact effect of finance on firms’ performance.

The analysis presented here does not seek to investigate or determine attribution that links IFC investments to SME job creation (or DFI investments to SME job creation more broadly). Money is fungible, after all.¹⁴² Instead, this analysis seeks to identify any observed correlation between bank loans and subsequent job growth, after controlling for firm- and country-level variables.

IFC's approach has been data-driven—largely dependent on the knowledge available from its client financial institutions—and supplemented by specially commissioned SME tracer surveys. However, there is much more research and work to be done that neither IFC, nor any other DFI, can effectively or efficiently carry out alone.

IFC believes that DFIs can, and should, work together, not only to collect data in a standardized way, but also to share data systematically. A collaborative approach would speed up processing times and ensure more informed conclusions can guide policy and enhance the strategy of all participants.

Beyond job creation

There are other dimensions of SME access to finance that could benefit from concerted analysis. For example, there is scope for further research in the following areas:

- Gender-based SME financing.
- Transitioning informal enterprises into formal SMEs.
- Addressing regional disparities.
- Boosting productivity.
- Understanding the evolving needs of SMEs with respect to the currently available financing instruments for SMEs. For example, are loans sufficient for SME growth, or would equity be a better option in some cases? What is the scope for other tools, such as convertible loans? Should investment come packaged with technical assistance, and how might that be funded?



Long-term collaboration

This report sheds light on the development impact IFC is making in improving SMEs' access to finance. Improved collaboration and in-depth data sharing among DFIs can ensure that financial institutions provide SMEs with better instruments and mechanisms to foster their growth and diversification. This, in turn, can have positive spillover effects at a broader level across many developing economies.

¹⁴²Money lent to a bank from a DFI may not directly go towards SME finance but instead towards other bank goals. While the loan to the bank may free up other resources to go to SMEs, this is hard to isolate and makes direct attribution from DFI financial support to SME job creation precarious. That is why this report cannot say that DFI loans to banks create SME jobs—we can only measure the job creation effects of bank loans to the enterprises themselves.

BIBLIOGRAPHY

- Acs J., Zoltan, Sameeksha Desai, and Jolanda Hessels. 2008. "Entrepreneurship, economic development and institutions." *Small Business Economics*, 31: 219–234.
- Aga, Gemechu, David C. Francis, and Jorge Rodriguez Meza. 2015. "SMEs, Age, and Jobs: A Review of the Literature, Metrics, and Evidence." *World Bank Policy Research Paper No. 7493*. Washington DC: World Bank Group.
- Agarwal, Rajshree and David B. Audretsch. 2001. "Does Entry Size Matter? The Impact of the Life Cycle and Technology on Firm Survival." *The Journal of Industrial Economics*, Vol. 49, No. 1 (March): 21–43.
- Asian Development Bank and ILO. 2016. "Women at Work." *Asian Development Bank Briefs: No. 68*. Manila: Asian Development Bank and the International Labour Organization.
- Aterido, Reyes, Mary Hallward-Driemeier, and Carmen Pagés. 2007. "Investment Climate and Employment Growth: The Impact of Access to Finance, Corruption, and Regulations Across Firms." *Institute for the Study of Labor (IZA) Discussion Paper No. 3138*. Bonn: Institute of Labor Economics.
- Aterido, Reyes, Mary Hallward-Driemeier, and Carmen Pagés. 2009. "Big Constraints to Small Firms' Growth? Business Environment and Employment Growth across Firms." *World Bank Policy Research Working Paper No. 5032*. Washington, DC: World Bank Group.
- Ayyagari, Meghana, Thorsten Beck, and Asli Demirgüç-Kunt. 2007. "Small and Medium Enterprises across the Globe." *Small Business Economics*, 29:415–434.
- Ayyagari, Meghana, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2010. "Formal versus Informal Finance: Evidence from China." *Review of Financial Studies*, Volume 23, Issue 8, 1 August: 3048–3097.
- Ayyagari, Meghana, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2014. "Who creates jobs in developing countries?" *Small Business Economics*, Vol. 43, No. 1 (June): 75–99.
- Ayyagari, Meghana, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2015. "Are Large Firms Born or Made? Evidence from Developing Countries." *World Bank Policy Research Paper No. 7406*. Washington, DC: World Bank Group.
- Ayyagari, Meghana, Pedro Francisco Juarros, Maria Soledad Martinez Peria, and Sandeep Singh. 2016. "Access to Finance and Job Growth: Firm-Level Evidence across Developing Countries." *World Bank Policy Research Paper No. 7604*. Washington, DC: World Bank Group.
- Banerjee, Abhijit V. and Esther Duflo. 2014. "Do Firms Want to Borrow More? Testing Credit Constraints Using a Directed Lending Program." *Review of Economic Studies* 81: 572–607.
- Banerjee, Ryan. 2014. "SMEs, financial constraints and growth." *BIS Working Paper No. 475*, Basel: Bank for International Settlements.
- Beck, Thorsten, Asli Demirgüç-Kunt, and Vojislav Maksimovic. 2005. "Financial and Legal Constraints to Growth: Does Firm Size Matter?" *Journal of Finance*, Vol. LX, No. 1.
- Benmelech, Efraim, Nittai K. Bergman, and Amit Seru. 2011. "Financing Labor", *NBER Working Paper Series*, Working Paper No. 17144. Cambridge, MA: National Bureau of Economic Research.
- Berner, Erhard, Georgina Gomez, and Peter Knorringa. 2012. "'Helping a Large Number of People Become a Little Less Poor': The Logic of Survival Entrepreneurs." *European Journal of Development Research* 24: 382–396.

- Bertrand, Marianne, Antoinette Schoar, and David Thesmar. 2007. "Banking Deregulation and Industry Structure: Evidence from the French Banking Reforms of 1985." *Journal of Finance*, Vol. LXII, No. 2. April: 597–628.
- Birch, David. 1987. "Job Creation in America: How Our Smallest Companies Put the Most People to Work." University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship.
- Birch, David L., Andrew Haggerty, and William Parsons. 1995. "Who's Creating Jobs?" Boston, MA: Cognetics Inc.
- Brown, David J. and John S. Earle. 2013. "Do SBA Loans Create Jobs?" Center for Economic Studies Paper No. CES-WP-12-27. Washington, DC: US Census Bureau.
- Brown, David J. and John S. Earle. 2015. "Finance and Growth at the Firm Level: Evidence from SBA Loans." IZA Discussion Paper No. 9267. Bonn: Institute of Labor Economics.
- Campello, Murillo and Mauricio Larrain. 2015. "Enlarging the Contracting Space: Collateral Menus, Access to Credit, and Economic Activity." *Review of Financial Studies*, Volume 29, Issue 2, 1 February 2016: 349–383.
- CDC Group and IFC. 2017. "SME finance and growth: evidence from RBL Bank." London: CDC Group plc.
- Centre for Economics and Business Research. 2016. "Small Business, Big Impact – The changing face of business finance." London: CEBR.
- Chodorow-Reich, Gabriel. 2014a. "Effects of Unconventional Monetary Policy on Financial Institutions", NBER Working Paper Series, Working Paper 20230, Cambridge, MA: National Bureau of Economic Research.
- Chodorow-Reich, Gabriel. 2014b. "The Employment Effects of Credit Market Disruptions: Firm-level Evidence from the 2008–09 Financial Crisis." *Quarterly Journal of Economics*, Vol. 129, No.1: 1–59.
- Crisuolo, Chiara, Peter N. Gal, and Carlo Menon. 2014. "The Dynamics of Employment Growth: New Evidence from 18 Countries." CEP Discussion Paper No 1274. London: Centre for Economic Performance.
- Cull, Robert and L. Colin Xu. 2011. "Job Growth and Finance: Are Some Financial Institutions Better Suited to Early Stages of Development than Others?" World Bank Policy Research Paper No. 5880. Washington, DC: World Bank Group.
- Dabla-Norris, Era, Yan Ji, Robert Townsend, and Filiz D. Unsal. 2015. "Identifying Constraints to Financial Inclusion and their Impact on GDP and Inequality: A Structural Framework for Policy." *International Monetary Fund Working Paper*, WP/15/22. Washington, DC: International Monetary Fund.
- de Kok, Jan, Paul Vroonhof, Wim Verhoeven, Niek Timmermans, Ton Kwaak, Jacqueline Snijders, and Florieke Westhof. 2011. "Do SMEs create more and better jobs?" EIM Research Reports. Zoetermeer: EIM Business Policy and Research.
- de Mel, Suresh, David McKenzie, and Christopher Woodruff. 2008. "Returns to Capital in Microenterprises: Evidence from a Field Experiment." World Bank Policy Research Paper No. 4230. Washington, DC: World Bank Group.
- Decker, Ryan, John Haltiwanger, Ron S. Jarmin, and Javier Miranda. 2014. "The Role of Entrepreneurship in US Job Creation and Economic Dynamism." *Journal of Economic Perspectives*, Vol. 28, No. 3: 3–24.
- Demirgüç-Kunt, Asli, Thorsten Beck, and Patrick Honohan. 2008. "Finance for All? Policies and Pitfalls in Expanding Access." World Bank Policy Research Report. Washington, DC: World Bank Group.

- Duygan-Bump, Burcu, A. Levkov, and J. Montoriol-Garriga. 2010. "Financing constraints and unemployment: evidence from the Great Recession", *Federal Reserve Bank of Boston Working Paper No. QAU10-6*. Boston: Federal Reserve Bank of Boston.
- Duygan-Bump, Burcu, Patrick Parkinson, Eric Rosengren, Gustavo A. Suarez, and Paul Willen. 2013. "How Effective Were the Federal Reserve Emergency Liquidity Facilities? Evidence from the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility." *Journal of Finance*, Vol. 68, No. 2 April: 715-737.
- Evans, David S. 1987. "The Relationship between Firm Growth, Size, and Age: Estimates for 100 Manufacturing Industries." *The Journal of Industrial Economics*, Vol. 35, No. 4, *The Empirical Renaissance in Industrial Economics* (June): 567-581.
- Greenstone, Michael, Alexandre Mas, and Hoai-Luu Nguyen. 2012. "Do Credit Market Shocks Affect the Real Economy? Quasi-Experimental Evidence from the Great Recession and 'Normal' Economic Times. NBER Working Paper No. 20704. Cambridge, MA: Cambridge, MA: National Bureau of Economic Research.
- Gries, Thomas and Wim Naudé. 2010. "Entrepreneurship and structural economic transformation." *Small Business Economics* 34: 13-29.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2004a. Does local financial development matter? *Quarterly Journal of Economics*, 119(3): 929-969.
- Guiso, Luigi, Paola Sapienza, and Luigi Zingales. 2004b. "The Role of Social Capital in Financial Development." *American Economic Review*, Vol. 94, No. 3 June: 526-556.
- Haltiwanger John, Ron S. Jarmin, and Javier Miranda. 2013. "Who Creates Jobs? Small Versus Large Versus Young." *The Review of Economics and Statistics*, Vol. 95, No. 2: 347-361.
- Heckman, J. J., 1976. "The common structure of statistical models of truncation, sample selection and limited dependent variables, and a simple estimator for such models." *Annals of Economic and Social Measurement*, 5, 465-492.
- Honohan, Patrick. 2004. "Financial Development, Growth and Poverty: How Close are the Links?" *World Bank Policy Research Paper No. 3203*. Washington, DC: World Bank Group.
- Hsieh, Chang-Tai and Peter J. Klenow. 2014. "The Life Cycle of Plants in India and Mexico." *The Quarterly Journal of Economics—Volume 129, Number 3—August 2014*: 1035-1084.
- Hsieh, Chang-Tai and Benjamin A. Olken. 2014. "The Missing 'Missing Middle'." *Journal of Economic Perspectives—Volume 28, Number 3—Summer 2014*: 89-108.
- Kuntchev, Veselin, Rita Ramalho, Jorge Rodríguez-Meza, and Judy S. Yang. 2013. "What Have We Learned from the Enterprise Surveys Regarding Access to Credit by SMEs?" *World Bank Policy Research Paper No. 6670*. Washington, DC: World Bank Group.
- Kushnir, Khrystyna, Melina Laura Mirmulstein, and Rita Ramalho. 2010. "2010 Report – Micro, Small, and Medium Enterprises around the World: How Many Are There, and What Affects the Count?" Washington, DC: World Bank and IFC.
- IFC. 2013. "IFC Jobs Study: Assessing Private Sector Contributions to Job Creation and Poverty Reduction", Washington, DC: IFC.
- IFC. 2015. "Banco Ganadero Case Study." Washington, DC: World Bank Group.
- IFC. 2015. "IFC's Engagement with CRDB Bank: Data Analytics Based on Expanded Appraisal." Washington, DC: World Bank Group.
- IFC. 2015. "Promoting Financial Inclusion in India: Evidence from Au Financiers (India) Limited." Washington, DC: World Bank Group.

- IFC. 2017. "IFC and Bank al Etihad Supporting Job Creation in Jordan." Washington, DC: World Bank Group.
- IFC. 2017. "MSME Profiling & Impact Tracer Survey: Eastern Bank Limited, Bangladesh." Washington, DC: World Bank Group.
- IFC. 2017a. "Global Overview: IFC Financing to Micro, Small and Medium Enterprises." Washington, DC: World Bank Group.
- IFC. 2017b. "MSME Finance Gap: Assessment of the Shortfalls and Opportunities in Financing Micro, Small, and Medium Enterprises in Emerging Markets." Washington, DC: IFC.
- ILO. 2014. "2014 Labour Overview. Latin America and the Caribbean." Lima: International Labour Organization Regional Office.
- Levine, Ross. 2004. "Finance and Growth: Theory and Evidence." NBER Working Paper Series, Working Paper 10766. Cambridge, MA: National Bureau of Economic Research.
- Martinez Peria, Maria Soledad, and Sandeep Singh. 2014. "The Impact of Credit Information Sharing Reforms on Firm Financing", World Bank Policy Research Paper No. 7013. Washington, DC: World Bank Group.
- McKenzie, David and Christopher Woodruff. 2008. "Experimental Evidence on Returns to Capital and Access to Finance in Mexico." World Bank Economic Review, Vol. 22, No. 3: 457–482.
- Pagano, Patrizio and Fabiano Schivardi. 2003. "Firm Size Distribution and Growth." Scandinavian Journal of Economics, Vol. 105, No. 2 June: 255–274.
- Pagano, Marco and Giovanni Pica. 2012. "Finance and Employment." Economic Policy, Vol. 27, Issue 69: 5–55.
- Rahaman, Mohammad M. 2011. "Access to Financing and Firm Growth." Journal of Banking & Finance 35: 709–723.
- Rajan, Raghuram G. and Luigi Zingales. 1998. "Financial Dependence and Growth." American Economic Review, Vol. 88, No. 3 June: 559–586.
- Sleuwaegen, Leo and Micheline Goedhuys. 2002. "Growth of firms in developing countries, evidence from Côte d'Ivoire." Journal of Development Economics, Vol. 68: 117–135.
- Van Biesebroeck, Johannes. 2005. "Firm Size Matters: Growth and Productivity Growth in African Manufacturing." Economic Development and Cultural Change, Vol. 53, No. 3: 545–583.
- World Bank. 2012. World Development Report 2013: Jobs. Washington, DC: World Bank Group.
- World Bank. 2016. "Entrepreneurs and Small Businesses Spur Economic Growth and Create Jobs." Feature article. June 20, 2016. Website accessed April 18, 2018. Washington, DC: World Bank Group.
- World Bank. "Small and Medium Enterprises (SMEs) Finance." Website accessed April 18, 2018. Washington, DC: World Bank Group.
- Zia, Bilal H. 2008. "Export incentives, financial constraints, and the (mis)allocation of credit: Micro-level evidence from subsidized export loans." Journal of Financial Economics, 87: 498–527.

ANNEX: STATISTICAL TABLES

Table A1: Summary statistics

ALL FIRMS		UNWEIGHTED		WEIGHTED			
No. of observations	Label	mean	median	mean	median	min	max
50,257	Number of permanent employees	37.21	15.00	25.55	11.00	0.00	130,000.00
50,257	Employment change (per year)	0.89	0.00	1.03	0.33	-210.00	122.50
50,257	Total loans (US\$ millions)	0.01	0.00	0.00	0.00	0.00	1.53
50,257	Annual sales (US\$ millions)	193,758.80	244.76	67,635.59	273.45	0.00	2,590,000,000.00
50,257	Firm age	17.15	13.00	15.20	12.00	1.00	225.00
50,257	Manufacturing	0.55	1.00	0.43	0.00	0.00	1.00
50,257	Services	0.39	0.00	0.50	1.00	0.00	1.00
50,257	Female ownership	0.29	0.00	0.39	0.00	0.00	1.00
50,257	Inflation (percent)	9.27	5.79			-18.90	197.00
50,257	GDP growth (percent)	4.91	5.50			-14.80	22.60
50,257	Young (age 1 to 5)	0.11	0.00	0.09	0.00	0.00	1.00
WITH LOAN		UNWEIGHTED		WEIGHTED			
No. of observations		mean	median	mean	median	min	max
1,755	Number of permanent employees	35.90	17.00	32.60	16.00	0.00	350.00
1,755	Employment change (per year)	1.94	0.67	2.85	1.00	-63.00	70.00
1,755	Total loans (US\$ millions)	0.15	0.06	0.17	0.09	0.01	1.53
1,755	Annual sales (US\$ millions)	2,803,739.00	1,658.38	391,661.10	592.42	0.27	2,240,000,000.00
1,755	Firm age	19.06	15.00	17.40	14.00	1.00	183.00
1,755	Manufacturing	0.51	1.00	0.49	0.00	0.00	1.00
1,755	Services	0.38	0.00	0.40	0.00	0.00	1.00
1,755	Female ownership	0.29	0.00	0.27	0.00	0.00	1.00
1,755	Inflation (percent)	7.35	5.24			-10.70	197.00
1,755	GDP growth (percent)	4.31	5.25			-14.80	22.60
1,755	Young age 1 to 5)	0.11	0.00	0.09	0.00	0.00	1.00
WITHOUT LOAN		UNWEIGHTED		WEIGHTED			
No. of observations		mean	median	mean	median	min	max
48,502	Number of permanent employees	37.26	15.00	25.43	11.00	0.00	130,000.00
48,502	Employment change (per year)	0.85	0.00	1.00	0.33	-210.00	122.50
48,502	Total loans (millions USD)	0.00	0.00	0.00	0.00	0.00	0.00
48,502	Sales (USD)	99,319.04	229.89	62,125.67	272.37	0.00	2,590,000,000.00
48,502	Firm age	17.08	13.00	15.16	12.00	1.00	225.00
48,502	Manufacturing	0.55	1.00	0.43	0.00	0.00	1.00
48,502	Services	0.39	0.00	0.51	1.00	0.00	1.00
48,502	Female ownership	0.29	0.00	0.39	0.00	0.00	1.00
48,502	Inflation (percent)	9.34	5.79			-18.90	197.00
48,502	GDP growth (percent)	4.93	5.50			-14.80	22.60
48,502	Young (age 1 to 5)	0.11	0.00	0.09	0.00	0.00	1.00

Table A2: Regression output

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Original	Weighted	Weighted							
VARIABLES	No weights	Missing weights normalized	Missing weights normalized, sales quartiles	SME 10 to 249; unweighted	SME 10 to 249; weighted	Restricted +/-249; 10 to 249; country-year	Restricted +249; 10 to 249; country-year	Restricted +249; 10 to 249; sales quartiles; country-year	HECKMAN - SME 10 to 249; unweighted	HECKMAN - SME 10 to 249; weighted
Total loans (million US\$)	7.059**	12.696***	11.645***	4.709**	9.090**	4.808***	8.985***	8.611***	3.884***	10.023***
	[2.419]	[2.513]	[2.305]	[1.646]	[2.764]	[1.564]	[2.804]	[2.830]	[1.150]	[2.204]
Country-year sales quartile 2			-0.998					0.230	0.325**	0.155*
			[1.451]					[0.372]	[0.151]	[0.067]
Country-year sales quartile 3			0.387					0.816*	-0.643*	-0.525*
			[0.451]					[0.460]	[0.356]	[0.232]
Country-year sales quartile 4			0.369					2.070***	-0.921	0.613
			[0.470]					[0.791]	[1.042]	[0.847]
Firm age (log)	1.662	0.068	0.009	-0.830***	-0.665	-0.804***	-0.646***	-0.667***	-0.391	-0.048
	[2.514]	[0.996]	[0.956]	[0.186]	[0.370]	[0.111]	[0.215]	[0.210]	[1.046]	[0.458]
Manufacturing	-4.249	-0.731	-0.713	-0.330	-0.723	-0.202	-0.772	-0.775	0.005	-0.005
	[2.938]	[1.552]	[1.566]	[0.323]	[0.597]	[0.241]	[0.546]	[0.548]	[0.025]	[0.015]
Services	-0.067	-0.432	-0.383	-0.247	-1.061	-0.234	-1.133*	-1.117*	0.150	-0.008
	[0.954]	[0.503]	[0.503]	[0.258]	[0.626]	[0.210]	[0.677]	[0.670]	[0.101]	[0.017]
Inflation deflator (percent)	0.096***	0.246	0.239	-0.004	-0.025					
	[0.020]	[0.163]	[0.159]	[0.003]	[0.021]					
GDP growth (percent)	0.390	0.025	0.017	0.052***	0.042					
	[0.316]	[0.147]	[0.144]	[0.014]	[0.026]					
Firm size (log sales)	0.211	-0.112		0.369***	0.353**	0.491***	0.362*			
	[0.139]	[0.171]		[0.090]	[0.119]	[0.092]	[0.185]			
Constant	12.694***	7.149	7.072	2.185***	3.336**	2.392***	3.167***	4.055***	1.004	-27.661
	[3.270]	[3.812]	[3.932]	[0.868]	[1.178]	[0.444]	[0.703]	[0.429]	[4.803]	[14.769]
Observations	50,257	50,257	50,257	32,052	32,052	32,337	32,337	32,337	46,488	46,488
R-squared	0.001	0.000	0.000	0.031	0.053	0.054	0.068	0.073		0.026
Weighted	No	Yes	Yes	No	Yes	No	Yes	Yes	No	Yes
Region	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	No	No	No	Yes	Yes
Country	No	No	No	No	No	Yes	Yes	Yes	No	No
SE robust cluster	Region	Region	Region	Region	Region	Country-Year	Country-Year	Country-Year	Region	Region
Data restriction 1	All ES countries + Zero Loans	All ES countries + Zero Loans	All ES countries + Zero Loans	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees
SE cluster	Region	Region	Region	Region	Region	Country-Year	Country-Year	Country-Year		

Table A3: Estimated coefficients on employment change—simultaneous quartile regression

	(1)	(2)	(3)
VARIABLES	0.25	0.5	0.75
Total loans (millions of US\$)	-0.000	4.032***	8.746***
	[0.000]	[0.654]	[1.604]
Firm size (log sales)	-0.000	-0.000	0.226***
	[0.000]	[0.002]	[0.010]
Firm age (log)	0.000	0.000	-0.256***
	[0.000]	[0.010]	[0.028]
Manufacturing	-0.000	-0.000	-0.356***
	[0.000]	[0.008]	[0.093]
Services	-0.000	-0.000	-0.744***
	[0.000]	[0.008]	[0.089]
Inflation deflator (percent)	-0.000	-0.000	-0.001
	[0.000]	[0.000]	[0.001]
GDP growth (percent)	-0.000**	-0.000	0.023***
	[0.000]	[0.001]	[0.004]
Constant	-0.000	0.667***	1.820***
	[0.000]	[0.010]	[0.156]
Observations	50,257	50,257	50,257
Weighted	No	No	No
Region	Yes	Yes	Yes
Year	Yes	Yes	Yes
Country	No	No	No
SE cluster	-	-	-
Standard errors in brackets			
*** p<0.01, ** p<0.05, * p<0.1			

Table A4: Regression-size subsample

	(1)	(2)	(3)
VARIABLES	10-49	50-99	100+
Total loans (US\$ million)	2.683**	3.071*	5.742**
	[0.945]	[1.565]	[2.054]
Firm size (log sales)	0.199***	0.453*	0.750***
	[0.050]	[0.220]	[0.058]
Firm age (log)	-0.535***	-1.714***	-2.193*
	[0.101]	[0.414]	[1.004]
Manufacturing	-0.537**	-0.914*	0.285
	[0.182]	[0.466]	[1.657]
Services	-0.486***	-0.381	1.044
	[0.131]	[0.376]	[2.191]
Inflation deflator (percent)	-0.003	-0.002	-0.114
	[0.002]	[0.026]	[0.069]
GDP growth (percent)	0.017	0.131***	0.136
	[0.011]	[0.026]	[0.083]
Constant	1.878***	5.502**	1.171
	[0.270]	[1.682]	[6.818]
Observations	22,973	4,901	4,835
R-squared	0.028	0.047	0.062
Weighted	No	No	No
Region	Yes	Yes	Yes
Year	Yes	Yes	Yes
Country	No	No	No
SE cluster	Region	Region	Region
Data restriction 2	No Weights		
Robust standard errors in brackets			
*** p<0.01, ** p<0.05, * p<0.1			

Table A5: SME job creation and productivity

SALES per WORKER						
VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Restricted +/-249; 10 to 249	Restricted +/-249; 10 to 249; weighted	Restricted +/-249; up to 100; weighted	Restricted +/-249; 100+; weighted	Restricted +/-249; 10 to 249; Over 2 years; weighted	Restricted +/-249; 10 to 249; Over 3 years; weighted
Total loans (US\$ millions)	1.697***	1.429**	1.489*	0.756*	1.380*	1.083**
	[0.141]	[0.513]	[0.714]	[0.371]	[0.652]	[0.436]
Firm age (log)	0.135	0.039	0.029	0.120	0.030	0.066
	[0.084]	[0.081]	[0.077]	[0.088]	[0.078]	[0.111]
Manufacturing	-0.145	0.133	0.131	0.028	0.213	0.100
	[0.083]	[0.112]	[0.115]	[0.183]	[0.157]	[0.172]
Services	-0.131	0.466**	0.505**	-0.197**	0.560**	0.386*
	[0.105]	[0.187]	[0.194]	[0.062]	[0.200]	[0.180]
Inflation deflator (percent)	0.011*	0.021	0.022	0.014	-0.047	0.028
	[0.005]	[0.015]	[0.015]	[0.021]	[0.036]	[0.019]
GDP growth (percent)	0.034	0.035	0.038	0.031	0.087	-0.046
	[0.043]	[0.033]	[0.033]	[0.037]	[0.047]	[0.047]
Female-owned	0.149	-0.037	0.013	0.062	0.054	-0.237
	[0.137]	[0.156]	[0.116]	[0.159]	[0.091]	[0.443]
Constant	2.041***	1.874***	2.079***	0.913*	4.257***	1.114**
	[0.412]	[0.460]	[0.499]	[0.405]	[0.570]	[0.319]
Observations	29,584	29,584	25,762	5,279	17,295	12,289
R-squared	0.076	0.189	0.212	0.121	0.246	0.116
Weighted	No	Yes	Yes	Yes	Yes	Yes
Region	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
Country	No	No	No	No	No	No
SE cluster	Region	Region	Region	Region	Region	Region
Data restriction1	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 100 employees	All ES countries + Zero Loans; 10 to 100 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees
Data restriction2	Employment Change restricted to -249/249	Employment Change restricted to -249/249	Employment Change restricted to -249/249	Employment Change restricted to -249/249	Employment Change restricted to -249/249	Employment Change restricted to -249/249
Robust standard errors in brackets						
*** p<0.01, ** p<0.05, * p<0.1						

Table A6: SME job creation and gender

	(1)	(2)	(3)
VARIABLES	Female ownership	Female ownership* loan	Female ownership* loan * young
Has loan	1.644***	1.754***	1.967***
	[0.268]	[0.396]	[0.488]
Female-owned	0.179	0.186	0.312
	[0.290]	[0.269]	[0.270]
Young	1.009	1.009	1.692*
	[0.710]	[0.710]	[0.734]
Young female-owned firm			-1.973***
			[0.510]
Loan by young firms			-3.835**
			[1.117]
Loan by female-owned firms		-0.373	-0.608
		[0.984]	[1.086]
Loan by young female-owned firm			3.410*
			[1.767]
Firm size (log sales) no outliers	0.399**	0.399**	0.400**
	[0.157]	[0.157]	[0.158]
Manufacturing	-0.758	-0.757	-0.734
	[0.610]	[0.611]	[0.653]
Services	-1.159	-1.156	-1.148
	[0.672]	[0.677]	[0.715]
Inflation deflator (percent)	-0.020	-0.020	-0.020
	[0.022]	[0.022]	[0.022]
GDP growth (percent)	0.023	0.023	0.026
	[0.031]	[0.030]	[0.031]
Constant	1.953	1.948	1.843
	[1.676]	[1.682]	[1.717]
Observations	29,231	29,231	29,231
R-squared	0.053	0.053	0.054
Weighted	Yes	Yes	Yes
Region	Yes	Yes	Yes
Year	Yes	Yes	Yes
Country	No	No	No
SE cluster	Region	Region	Region
Data restriction1	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees	All ES countries + Zero Loans; 10 to 249 employees
Data restriction2	Employment Change restricted to -249/249	Employment Change restricted to -249/249	Employment Change restricted to -249/249
Robust standard errors in brackets			
*** p<0.01, ** p<0.05, * p<0.1			

Propensity score matching

Loan granting is not a random process. Establishments self-select to apply for loans and banks select future customers from this pool of applicants. The data used in this research observes establishments that are granted loans as well as those that are not granted loans. This research used Heckman correction to handle the selection bias. As robustness checks, the establishments that received a loan can be matched based on their probability of getting one. This is a

two-step procedure: first, the probability of obtaining a loan is calculated; then the observations are compared based on their likelihood to obtain the loan. Except for the weighted ordinary least squares estimator, all other estimators follow this logic.

The table below illustrates the results of the average treatment on the treated, where the “treated” are the establishments with a loan.

Table A7: Propensity score matching

Employment change	Weighted ordinary least squares		Regression adjustment		Propensity score matching		Nearest-neighbor matching		Inverse-probability-weighted regression adjustment	
	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE	Coefficient	SE
Has loan versus no loan	2.32***	0.54	2.41*	1.38	0.70*	0.39	0.95***	0.34	1.86**	0.97
Number of observations	49,391		49,391		49,391		49,391		49,391	

The results in the table clearly shows that just having a loan implies more employment over the next years. The range is between one and two employees. All estimates are significant at least at 10 percent level. If these findings are compared to

the upper bound estimation illustrated in Chapter 3, then loans to SMEs on their own are likely to add between one and eight permanent jobs in two time periods.





IFC's clients' roles in closing the SME finance gap

In developing countries, 44 percent of SMEs are either fully or partially credit-constrained. As noted earlier, it is estimated that the overall SME finance gap is \$4.5 trillion, which is about 16 percent of developing countries' GDP. Figure A1, based on a recent IFC study, shows that IFC's

Reach Survey data for 2016 is correlated positively with estimates of the SME finance gap. In the figure's scatter plot, each data point represents a different country.¹⁴³ This suggests that IFC's investments are aligned with cross-country distribution of SME financing needs.

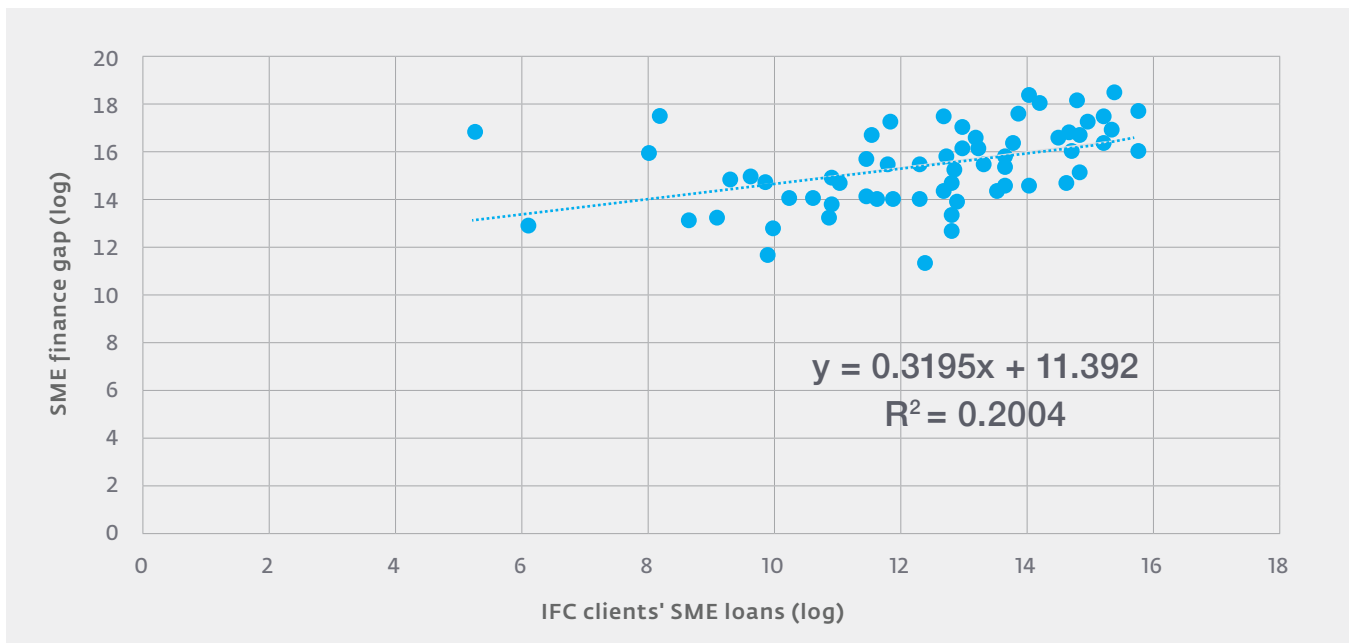


Figure A1: IFC's clients' role in closing the SME finance gap

Source: Authors' calculation, based on CY2016 IFC reach data and MSME finance gap data.¹⁴⁴

¹⁴³ Analysis is based on volume of SME finance gap and volume of outstanding SME loans.

¹⁴⁴ For greater data point visibility, the following outliers have been omitted as they have an SME finance gap that is greater than \$100 billion and/or an SME loan volume that is greater than \$10 billion: Brazil (both); Chile (SME loan volume); China (both); India (both); Mexico (SME finance gap); Philippines (both); Russia (SME finance gap); Turkey (SME loan volume); Vietnam (SME loan volume). It is important to note that the relationship holds when the outliers are included, and their omission shows that they do not skew the outcome either way.

Photo credits: International Finance Corporation, World Bank Group, StockSnap, UN Women (on Flickr), Carlos Adampol Galindo, Adriano Rangel.

March 2021



Creating Markets, Creating Opportunities