MSME FINANCE GAP

ASSESSMENT OF THE SHORTFALLS AND OPPORTUNITIES IN FINANCING MICRO, SMALL AND MEDIUM ENTERPRISES IN EMERGING MARKETS

WORLD BANK GROUP

SME FINANCE FORUM

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Acknowledgements

Acronyms

AFI	Alliance for Financial Inclusion
BOW	Banking on Women
CAGR	Cumulative Adjusted Growth Rate
CENFRI	Centre for Financial Regulation and Inclusion
CGAP	Consultative Group to Assist the Poor
DTF	Distance to frontier
EAP	East Asia and Pacific
ECA	Europe and Central Asia
ECB	European Central Bank
EIB	European Investment Bank
EIF	European Investment Fund
ES	Enterprise Survey
EU	European Union
FI	Financial institution
FCC	Fully credit-constrained
FAS	Financial Access Survey
FMO	Netherlands Development Finance Company
GDP	Gross domestic product
GSMA	Groupe Spéciale Mobile Association (Mobile Network Operators)
IFC	International Finance Corporation
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IRR	Internal rate of return
ISIC	International Standard Industrial Classification
IT	Information technology
KPI	Key performance indicator

KYC	Know Your Customer
LAC	Latin America and the Caribbean
LIFT	Livelihoods and Food Securities Trust Fund
LTDB	Long-Term Debt
MPOS	Mobile point-of-sale
MIX	Microfinance Information Exchange
NCC	Not credit-constrained
NFS	Non-financial services
NPL	Non-performing loan
OECD	Organisation for Economic Co-operation and Development
OLS	Ordinary least squares
PCC	Partially credit-constrained
PO	Purchase order
MAPE	Mean absolute percentage error
MENA	Middle East and North Africa
MFI	Microfinance institution
MSME	Micro, Small and Medium Enterprises
RoA	Return on assets
RoE	Return on equity
SA	South Asia
SAFE	Survey on the Access to Finance of Enterprises
SCF	Supply chain financing
SME	Small and Medium Enterprises
SSA	Sub-Saharan Africa
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
WBG	World Bank Group
WDI	World Development Indicators

Foreword

At the International Finance Corporation, we pay special attention to small businesses because they are the engines of job creation and economic growth. Nine out of ten new jobs worldwide are created by small businesses, and we need nearly 3,3 million jobs every month in emerging markets by 2030 to absorb the growing workforce. Lack of access to finance is one of the biggest hurdles small businesses face that prevent them from growing and creating jobs.

The private and public sector can better address this problem if they have better insights about the magnitude and nature of the finance gap. With this in mind, IFC and McKinsey & Company conducted the first comprehensive assessment of the global MSME finance gap in 2010. At that time, the magnitude of the gap – over $2 trillion annually – caused quite a stir. However, looking back now we find that with the scarce data available then along with the limitations of the methodology, we were, if anything, too conservative in our estimation before. To address this, a group of staff from across the World Bank Group has developed a new methodology that utilizes better and more diverse data from both supply and demand sides to assess the finance gap in developing countries.

The results this time are even more staggering: 65 million enterprises, or 40 percent of formal micro, small and medium businesses in developing countries, have an unmet financing need of $5.2 trillion every year.

So how are we addressing this financing gap and helping small businesses thrive?

- We are **providing investments and advisory services** to financial intermediaries catering to small businesses. In 2016, 304 of our financial institution clients made 62 million loans to micro, small and medium enterprises valued at $412 billion.

- We are strengthening financial markets by **supporting collateral registries and credit bureaus** that facilitated more than $250.6 billion in financing in 2016. More than 679,900 micro, small and medium enterprises were able to receive loans secured with movable property.

- We are investing and working with the multiple **FinTech companies** such as Ant Financial, Welabs, Afluenta, Moni, Kreditech, and Confio, which use cutting edge innovations to revolutionize MSME finance. Through these fintechs, IFC reaches hundreds of thousands of MSMEs.

- We also are **promoting knowledge-sharing**. The SME Finance Forum, which is managed by IFC, helps banks, fintechs and development banks learn from each other, link to new business and partnership opportunities, and lead in the industry-policymaker dialogue.

The World Bank Group has taken on an ambitious goal of universal financial inclusion by 2020. The UN Sustainable Development Goals adopted by 193 member states calls for ensuring access to finance for small businesses, and the G20 leaders have also recognized the importance of financing SMEs as a critical piece of economic development. There is no doubt that closing the financing gap for small businesses has become a policy priority around the world. With co-operation and action by governments and the private sector, we believe that closing this gap for small businesses is achievable.

Philippe Le Houérou
Chief Executive Officer of IFC

Executive Summary

Micro, Small and Medium Enterprises (MSMEs) represent a significant part of the world economy, and are one of the strongest drivers of economic development, innovation and employment. Access to finance is frequently identified as a critical barrier to growth for MSMEs.[1] A growing body of literature has highlighted the extent to which MSMEs are credit constrained across developing countries — including the importance of relieving this constraint to achieve higher growth.[2] Creating opportunities for MSMEs in emerging markets is a key way to advance economic development and reduce poverty. In this regard, it is also one of the major priorities of the World Bank Group and other development institutions around the globe.

In recognition of the need to quantify the extent of the MSME finance gap, the International Finance Corporation (IFC) partnered with McKinsey & Company in 2010 to produce an estimate of the gap.[3] As the first study of its kind, the aim was to produce approximate figures that could, at an aggregate level, highlight this critical issue and the scale of the challenge. However, the assumption and methodology of the study raised concerns about its use at a more granular level. For example, cross-country comparisons, crucial for strategic policy decisions by international organizations and others, were not possible.

In response, a collaboration between various units at the IFC and the World Bank's research unit developed an innovative methodology that reassesses the gap and significantly moves this analytical work forward. The team has estimated the systemic finance gap by utilizing more data from both the demand and supply sides. As a result, it has produced more accurate, actionable country-level estimates of the gap.

In the developing economies studied,[4] the potential demand for MSME finance is estimated at US $ 8.9 trillion, compared to the current credit supply of $3.7 trillion.[5] The finance gap from formal MSMEs in these developing countries is valued at $5.2 trillion, which is equivalent to 19 percent of the gross domestic product (GDP) of countries covered in this analysis. This in turn amounts to 1.4 times the current level of MSME lending in these countries. In addition, there is an estimated $2.9 trillion potential demand for finance from informal enterprises in developing countries, which is

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1. For example, see World Bank Enterprise Surveys: http://www.enterprisesurveys.org/research/enterprisenotes/topic/finance.

2. World Bank, *Global Financial Development Report 2014: Financial Inclusion*. (Washington, DC: World Bank Group, 2013).

3. Stein, Peer, Tony Goland and Robert Schiff. *Two Trillion and Counting: Assessing the Credit Gap for Micro, Small, and Medium-size Enterprises in the Developing World.* (2010).

4. This study covers 128 countries, of which 112 are low- and-middle income countries. The remaining low- and middle-income countries for which the analysis was not carried out due to data unavailability together comprise only about 1 percentage of the overall GDP of the emerging (low- and middle-income) economies.

5. The data source for the supply of MSME finance is the IMF Financial Access Survey — actual or extrapolated (if missing).

equivalent to 10 percent of the GDP in these countries. This research estimates that there are 65 million formal micro, small and medium enterprises that are credit constrained,[6] representing 40 percent of all enterprises in the 128 reviewed countries.[7]

Ostensibly, in comparison to the previous IFC estimate of the MSME finance gap, the level of the overall gap is larger. However, the increase in the estimate of the gap is primarily driven by changes in the methodology. It should not be necessarily interpreted as an increase in the gap, but rather as a more accurate re-calculation of the gap. Also, this robust methodology has the added benefit of being easier to update in future years. Thus, for the first time, the evolution of the gap will be captured, and the dynamic changes to the gap can be more accurately assessed.

Data availability is the main hindrance to providing more granular estimates of the gap than can be provided here. Even with the currently proposed methodology, the lack of data imposed the need to make stronger assumptions than would be necessary if data availability was not an issue. As access to financing for MSMEs continues to be an issue of critical importance, there is an ongoing need to improve data collection efforts for MSME financing in developing countries.

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6. The credit-constrained MSMEs may be either partially or fully credit constrained.

7. There are also a large number of informal enterprises lacking finance. However, due to the data limitations, this study does not estimate the number of informal businesses.

I. Introduction

As in most economies, MSMEs in emerging markets are widely believed to be the engine of growth across. MSMEs employ a majority of the population and contribute significantly to economic growth. Yet, one of the main constraints to MSME growth has been access to finance. Given the importance that MSMEs play in economic development and job creation, financing for MSMEs has emerged as a popular topic of discussion and research (Hallberg 2001).

Over the last decade, many researchers and academics have tried to analyze the issue of MSME access to finance, emphasizing their dependence on credit and cash flows. Beck and others (2014) concluded that MSMEs appear to be severely underfunded. Ayadi and Gadi (2013) found that SMEs face numerous obstacles in borrowing funds because they are small, less diversified, and have weaker financial structures. This is implied by evidence pertaining to payment delays on receivables, declining liquidity, and an increase in MSME insolvencies and bankruptcies. In addition, MSMEs find it difficult to provide high-quality collateral at all times. They also experience difficulties in ensuring transparency with respect to their creditworthiness.

Some studies show that MSMEs are more likely to face more credit constraints than larger firms. They also rely more heavily on trade credit and informal sources of credit. Indeed, "throughout the developing world access to credit is inversely related to firm size but positively related to productivity and financial deepening in the country" (Kuntchev, Ramalho, Rodriguez-Meza, and Yang 2014).

Within-country evidence also points to credit constraints for MSMEs. For example, an impact evaluation from India exploits variation in access to a targeted lending program. It finds that many SMEs are credit constrained, and that providing additional credit to SMEs can accelerate their sales and profit growth (Banerjee and Duflo 2012). In addition, research from Pakistan shows that a drop in subsidized credit led to a significant decline in exports for small firms, but not for large firms. Large firms were able to replace subsidized credit with credit at market interest rates. However, this was not true for small firms, thereby indicating that small firms are credit constrained (Zia 2008).[6]

This study presents a new approach to the estimation of the unmet demand for financing from MSMEs in developing countries. Importantly, it also describes the potential implications for the public-sector bodies, private sector financial institutions and technology providers. The present research adds significant value to the repository of data in the MSME space, and opens new opportunities for further investigation. It estimates both supply of and demand for MSME finance on a global scale, which has never been done in

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8. Another potential explanation for the findings is that small firms are less productive. Therefore, they cannot pay market interest rates. However, over 95 percent of small firms have at least some credit at market interest rates. Moreover, Zia (2008) does not find that more productive firms were less affected by the drop in subsidized credit.

a comprehensive way. Although there are multiple regional and country-level studies, none have looked holistically at the entire universe of developing economies.

With the primary motivation of developing a robust and replicable methodology for measuring the finance gap, the authors of this study have benefited from various data sources, such as the Bureau Van Dijk – Orbis data, the International Monetary Fund (IMF) Financial Access Survey data, the Organisation for Economic Co-operation and Development (OECD) Financing SME and Entrepreneurs Scoreboard, and the World Bank Enterprise Survey data, among others.[7] However, challenges remain with regard to the availability and reliability of good data (especially in the informal sector) necessary to make strategic decisions for servicing MSMEs. This highlights the need for further improvements in MSME-related data globally through investments in primary data collection (surveys) and secondary data aggregation (maintaining private and public data depositories). In addition, further investments are needed to facilitate the comprehensive standardization of improved data.

The potential demand approach used in this research assumes that firms in developing countries have the same willingness and ability to borrow as their counterparts in developed markets. This approach estimates MSME equilibrium lending in developed economies according to the industry, age and size categories, and applies this benchmark to MSMEs in developing countries. It estimates the MSME finance gap as the difference between current supply and potential demand which can potentially be addressed by financial institutions. The study also estimates the potential demand for MSME finance in the informal sector by investigating the size of the shadow economy.

This report is divided into five sections. The first section reviews the literature about financing MSMEs. The second section describes the methodology of the present research, data sources, and the model specification. The third section analyzes the results of the finance gap estimation, including regional comparisons, formal and informal MSME sector results, and gender disaggregated statistics. The fourth section elaborates on the implications of the finance gap for the public sector, including government agencies and multilateral organizations and lending institutions. Finally, the fifth section highlights implications for the private sector, including banks and non-bank financial institutions, as well as financial technology companies.

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9. There are other data sources of the supply and demand of MSME finance, such as originated by Microfinance Information Exchange (MIX), GSM Association (GSMA), Alliance for Financial Inclusion (AFI), the Consultative Group to Assist the Poor (CGAP), Finscope, and the United Nations Capital Development Fund (UNCDF). However, they lack standardization and comprehensive country coverage, thereby making the data difficult to use in a global study.

II. Other Finance Gap Studies

The challenge of access to finance as a constraint for MSMEs has been thoroughly established through research efforts. However, little research has been conducted about the difference between the supply and demand of financing to MSMEs to determine if a financing gap exists for MSMEs, and, if so, what the size of such a gap would be. In recent years, researchers have tried to explore this question for emerging markets in general, or for a smaller group of developing countries.

In 2010, for the first time, the IFC and McKinsey & Company tried to estimate the size of the MSME financing gap. The results were released through the IFC Enterprise Finance Gap database. This study was updated again in 2013 (IFC 2013) and eventually covered 177 economies. The study concluded that the size of the gap in developing economies was around $ 2.1–$ 2.6 trillion, or about one-third of the total outstanding MSME credit in these countries. Of the 85-100 million formal MSMEs in developing countries, close to 60 percent are estimated to be either unserved, that is, they do not have a loan or overdraft —or underserved, that is, they have a loan or overdraft, but still experience access to finance as a constraint.

Regional studies have mostly focused on Europe because the data quality at the firm level is much better then in developing economies. As such, the OECD has been looking at this issue since 2006. They refer to the SME finance gap as the "financing gap". The first study the OECD (2006) undertook was a qualitative assessment of how prevalent such a gap is in both OECD and non-OECD countries. The study concluded that emerging economies have a more pervasive gap than in OECD countries. Subsequently, the OECD (2016) started publishing an annual scorecard on SME financing, and explored options for alternative sources of financing for SMEs to bridge both their financing and information gaps (OECD 2015). Using the scorecard, the OECD now annually tracks core indicators for 37 OECD countries.

In 2013, the European Investment Bank (EIB 2013) conducted a series of studies to measure the financing needs of its Eastern Partnership Programme Countries, including Armenia, Azerbaijan, Georgia, Moldova, and Ukraine. In its synthesis report containing the results from all five countries, the EIB tried to measure the demand and supply of credit based on publicly available data. The measure for demand was the average loan demanded by firms that received a loan. The measure for supply was based on outstanding loans to SMEs in a given country. The study concluded that although the financial sectors in these countries are doing an adequate job of providing financing to SMEs, there are sizeable gaps in rural areas, as well as in the agricultural sector. There are also financing gaps for SMEs lacking collateral, for longer tenure credits, and for SMEs whose owners have lower literacy levels.

The European Investment Fund (EIF) (2014) tried to quantify suboptimal investment situations and the investment needs of SMEs through a pragmatic approach that incorporates a forward-looking element into the market assessment. As such, the EIF complemented the comparison of supply and potential demand for financing for SMEs with an analysis of SME finance market weaknesses. For each financial instrument,

the EIF tried to assess a mismatch between potential demand and supply. The resulting mismatch is their measure of the SME finance gap.[8]

Supply was measured based on publicly available data, and expected demand was calculated based on reasonable estimates of average loan amounts multiplied by the number of expected applications. As the latter measures potential demand, it is also expected to take into consideration the fact that some SMEs may not apply for financing because they expect their applications to be rejected. This practical approach has been tested in multiple countries. Similar to the findings of Kuntchev and others (2013), the EIF also concluded that smaller and younger companies have bigger financing gaps.

Based on the work of the EIB and the EIF, the European Union (EU) Commission estimated the SME financing gap for its member countries in 2013. The study concluded that for the years 2009-2012, the average SME financing gap for the EU was within the range of €20 to €112 billion per country. The study multiplied the average SME loan size by the proportion of financially viable SMEs that faced problems accessing financing between 2009 and 2012. This included SMEs that were refused loans, SMEs that had turned down bank loans, and those that were discouraged from applying for loans.

Lopez de Silanes and others (2015) conducted a pan-European study estimating the difference between supply and demand in SME financing. In particular, they focused on five European countries: France, Germany, the Netherlands, Poland, and Romania. They concluded that the SME financing gap (as a share of GDP) in these countries is three to five times larger than that of the United States (US). This study used

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10. The European Court of Auditors (2012b, p. 18) sees "a full analysis of nationwide demand and supply of SME finance by type of financial instrument" as best practice for an assessment of a financing gap.

publicly available data on outstanding loans and equities issued to SMEs in order to estimate the supply of SME financing. The demand for loans and equity among SMEs was computed using the Survey on the Access to Finance of Enterprises (SAFE) of the European Central Bank (ECB) and publicly available data. The authors built on the EIB methodology (2013) by using additional sources of data and a broader measure of loan demand. The loan demand was measured by triangulating loans obtained versus loans desired by SMEs. They also measured the loan demand of those firms that had applied for loans, but had been rejected.

A lack of cross-country statistics led multiple researchers to focus their work on country-level analysis of the financing gap. Most of these studies relied on publicly available measures of the supply of credit. However, some tracked different measures for actual demand, while others tried to measure potential demand. Singh and others (2016) concluded that in 2014-15, a $0.77 billion financing gap existed for women-owned SMEs in Bangladesh. This amount corresponds to an unmet financing demand for 60.2 percent of women-owned SMEs. Similarly, IFC (2014) estimated that there was $5 billion in additional loans demanded by Mongolian SMEs in 2014, of which 24 percent corresponds to demand by women-owned SMEs. In Indonesia, the IFC (2016) estimated that 54 percent of SMEs were interested in obtaining a bank loan. Of these SMEs, the potential demand for credit from women-owned SMEs in 2014 amounted to $6 billion. A similar study by the IFC in 2012 estimated the potential demand gap by MSMEs in India to be $418 billion.

This study makes a unique contribution to the existing literature by providing estimates of the size of the MSME financing gap across developing economies from both the demand and supply sides. As noted, previous literature focused on regional- or country-level estimates due the paucity of data, and the only other cross-regional estimates analyzed the gap only from the supply side. This report estimates the size of the MSME finance gap using a potential demand approach, which is outlined in Section III. Essentially, it models the potential demand for credit by MSMEs, and tries to match it with the supply of credit.

While arriving at this unique approach (Section III), the team also tried to extend the work of Beck and others (2013) to devise another measure. Beck and others (2013) outline multiple frameworks to measure potential demand using a financial possibility frontier, or a constrained optimum to categorize different problems of shallow financial markets that result in a mismatch between supply and demand for financial services.

A simple regression equation was used to estimate the relationship between MSME outstanding finance volumes and other country-level macroeconomic and institutional characteristics (for example, population, GDP per capital, lending rates, existence of credit bureaus, the stability of the banking sector, and the number of MSMEs). Assumptions about potential values of some of the dependent variables were used to estimate the frontier volume of potential demand for MSME finance. The difference between this predicted value of potential demand and the current volume of outstanding MSME finance could have been another measure of the MSME finance gap. This measure

would represent the additional MSME finance demanded by firms if the countries' macroeconomic and institutional conditions improved. This approach concluded that the MSME financing gap in emerging economies exists and is sizeable.

However, the size of the gap was sensitive to data limitations, including missing data and outliers. For example, as estimates of all countries depend on each other, changes in the data for one country sometimes led to big changes in estimated demand for another country. Furthermore, in order to use this macroeconomic model across multiple countries, the list of dependent variables that could be used was limited. In this regard, the team decided to only present the results of the potential demand approach (as outlined in Section III of this report).

III. Current Methodology

Any proposed methodology to estimate the MSME finance gap faces a number of conceptual and data availability challenges. This section, guided by the leading question of why a finance gap might exist, discusses the proposed methodology in detail.

The first issue in developing an empirical methodology aimed at estimating the gap is conceptualizing what a MSME finance gap actually means. According to the tenets of basic economic theory, under market-clearing equilibrium interest rates, the amount of financing demanded equals the credit being supplied. Thus, a "financing gap" is not a meaningful concept. However, subsequent economic literature has moved to identifying peculiarities of finance that may lead to the existence of a financing gap without price distortions because financiers may not supply loanable funds for a variety of reasons. For instance, some issues of primary importance include the complications arising from asymmetric information, such as moral hazard and adverse selection (Stiglitz and Weiss 1981).

Therefore, the core of an empirical strategy in estimating the financing gap is to frame the effect of these challenges which leave firms unable to access external financing. The concept of a MSME financing gap proposed here relies on estimating how much financing MSMEs in a country would have sought (willingness) and been able to obtain (ability) if they operated in a better institutional, regulatory and macroeconomic environment. On the supply side, this environment would allow financiers to make available more financing as challenges, such as asymmetric information, would be mitigated.

The second, more practical issue relating to estimating the finance gap is the scarcity of broadly available cross-country data on both the supply and the demand sides.

Several institutions collect data about the supply of finance. For example, IFC surveys approximately 400 financial institutions annually (the Reach Survey), and collects data on the loan portfolio to MSMEs, retail and corporate customers. The data collection also includes deposit volumes, channels, and demographic information of the client base of the financial institution (FI). Another example is an annual survey conducted by MIX, which partners with 1,033 microfinance institutions to collect data about their loan portfolios, deposits, gender financing, channels, margins and other outreach and profitability indicators.

Great progress has been achieved in improving these data sources. However, the data remains fragmented and is not entirely representative of each developing country.[9] The Financial Access Survey (FAS) of the

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11. Other institutions conduct country-level diagnostics to collect supply-side data. For example, as a result of a partnership between the UNCDF, the United Nations Development Programme (UNDP), the Livelihoods and Food Securities Trust Fund (LIFT) and the Centre for Financial Regulation and Inclusion (Cenfri), the Making Access Possible initiative collects supply-side data through the in-country research and interviews with key players (for example, Making Access Possible (for example, Myanmar Financial Inclusion Roadmap 2014-2020)

International Monetary Fund (IMF) is a global data depository of statistics about outstanding loan portfolios of almost all of the financial institutions around the world. Although this database is not complete for all countries, it is a serious attempt to harmonize the data collection. Continued progress is expanding the coverage as well as the depth of MSME supply-side data, which will bolster further research on the topic. FAS data was used as a primary source of supply-side data for the purposes of the present study. It was supplemented by the data from the SME Scorecard of the Organisation for Economic Co-operation and Development (OECD), as described in more detail in Step 3 below.

Estimations relating to the demand for financing require detailed firm-level data that is comparable across countries. Some institutions conducted in-depth, firm-level surveys and studies to identify demand for finance and constraints regarding access to finance at the country level, such as initiatives supported by development financial institutions, including the Consultative Group to Assist the Poor (CGAP), IFC,[10] the World Bank, the Netherlands Development Finance Company (FMO), the UNCDF, FinScope,[11]and national statistical bureaus, among others.

However, these surveys and studies lack cross-country harmonization. Thus, detailed firm-level data with comprehensive information about current financial standing and financing needs are unavailable at the global level. This restriction implies that any estimation of the financing gap has to rely on less complex, firm-level data sources, for example, data collected by the World Bank Enterprise Surveys. The lack of data also imposes the need to make stronger assumptions than would be necessary if data availability was not an issue.

The lack of uniform data about the informal MSME market segment represents an especially serious constraint. Multiple agencies are working on collecting data from microfinance institutions, including MIX and the Groupe Speciale Mobile Association (GSMA) or mobile network operators, where many informal enterprises might be traced. However, there is no governing body or unified data aggregator which can be confidently used as a source of informality data across all developing countries. This study refers to the only known global research about the shadow economy by Schneider and others (2010), and an extension of this research by Schneider (2012) as a proxy for the informal MSME segment.

Overview of Methodology

The methodology proposed here for calculating the MSME finance gap relies on estimating the "potential demand" for financing by MSMEs in emerging economies, and then comparing it with the current supply of financing. The notion of potential demand expresses the amount of financing that MSMEs would need, and financial institutions would be able to supply if they operated in an improved institutional, regulatory and macroeconomic environment. Conceptually, this methodology concretely bases the calculation of the financing gap on underlying issues that give rise to it in the first place.

For this purpose, and as a first step, the methodology entails benchmarking the prototypical financing environment where MSME credit markets function with minimal imperfections. How much do MSMEs of a certain size and a certain maturity level (age) operating in a certain industry/sector typically borrow under "ideal" conditions? The second step is to apply these benchmarks to MSMEs operating in the emerging

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12. Multiple studies, including Bangladesh, Indonesia, Mongolia, and Vietnam.

13. Multiple country-level studies, including Cambodia, India, Myanmar, Pakistan, and Tanzania.

economies where the gap is to be calculated. This results in the estimated "potential demand". Finally, the third step is to compare the potential demand with the existing supply within these countries to quantify the MSME finance gap. From a data availability standpoint, this approach also has the practical benefit of requiring more detailed firm-level financial information only for MSMEs in the benchmarked developed economies.

The underlying thrust of this methodology arises from assumptions first proposed by Rajan and Zingales (1998). In particular, the methodology here relies on three assumptions set forward in their influential paper, namely that: (1) "there are technological reasons for variability in dependence on external finance across industries"; (2) "technological differences persist across countries"; and, therefore (3) "we can use an industry's dependence on external funds as identified in the United States as a measure of its dependence in other countries". Although Rajan and Zingales use these assumptions for a very different purpose, they can peripherally guide the starting point of the methodology proposed here.

This proposed approach has a number of advantages, as well as limitations, over the other finance gap estimation methods.

Advantages of the Methodology

By its very nature, the estimation of the finance gap requires contemplating a counterfactual scenario. As discussed, computing the actual demand for the countries is not helpful, as it would equal supply under market-clearing equilibrium conditions. The thrust behind the existence of a gap lies with those MSMEs that would/could borrow more given *certain improvements* in the financing environment. This can also be thought of as the higher willingness of financial institutions to finance credit-worthy MSMEs. IFC's previous study (2010) about the MSME finance gap used firm-level datasets to identify enterprises that were credit constrained. It also made assumptions regarding how much these enterprises would want to borrow.

The problems with the previous approach are primarily twofold: (1) the assumptions about how much credit constrained firms would borrow was highly arbitrary; and (2) the counterfactual under which the gap exists was not well defined. The problem stemming from the counterfactual definition was that it was difficult to comprehend the total increase in the demand for finance. The changes in the enabling environment would not only allow an expansion of access to those MSMEs currently without sufficient financing, but would also trigger even more borrowing by those MSMEs that currently had financing. On the supply side, the lack of a definition of the counterfactual also raised uncertainty about the bankability of those currently unserved or underserved MSMEs. In fact, the previous methodology did not consider how much financial institutions would want to finance. Hence, the bankability consideration was entirely absent.

The methodology proposed here defines the counterfactual more concretely. By relying on a benchmarking approach, the regulatory and macroeconomic changes required for the gap to manifest are clearly defined.

Limitations of the Methodology

This methodological approach has several limitations. For example, the benchmarking exercise assumes that a MSME finance gap and market distortions in MSME lending do not exist in the benchmarked countries. In addition, the benchmarking concentrates simply on the debt-to-sales ratio. There is a strong assumption that debt levels are primarily a function of sales. The most important limitation, perhaps, is in terms of interpretation and usability. The MSME finance gap estimated utilizing this methodology captures the latent demand that is only realized over the long-term when these economies approach financial development and regulatory sophistication similar to that of the benchmarked countries. This may not be the most useful measure of the gap for some scenarios and countries. For example, in a low-income country with very little financial development and an inadequate enabling regulatory environment, the gap — when its level of development approaches that of an advanced economy — may not be the appropriate comparator. For this country, a much more actionable data feature could be the gap when benchmarked against a regional comparator.

The methodology proposed here is fluid enough to be adapted for such a comparison. Data permitting, the ratios of debt-to-sales for a regional comparator can be utilized as the appropriate benchmark. For the purpose of this report, however, the benchmarked countries are defined globally so that the resulting gap is comparable across countries.

Each of the three computation steps of the methodology are now described in more detail.

Step 1: Benchmarking

As outlined above, the first step of the methodology entails estimating the financing needs of MSMEs in benchmarked countries where credit markets function relatively smoothly. Rajan and Zingales (1998) use the United States as their sole benchmark. However, they acknowledge that any country with a well-functioning credit market can, in principle, be used to measure the industry's dependence on external financing. A wider selection of benchmark countries will also broaden coverage to a diverse number of industries.

Ten countries serve as benchmarks: Australia, Canada, Denmark, Germany, Ireland, Israel, New Zealand, Switzerland, the United Kingdom, and the United States. These countries are selected based on the criteria that they are high-income and rank highest on the "Getting Credit" module of the World

Bank's *Doing Business Index*. The Getting Credit module explores two sets of issues—the strength of credit reporting systems and the effectiveness of collateral and bankruptcy laws in facilitating lending. In addition, income-level proxies are used for a host of characteristics related to regulatory efficiency. Together, these two criteria drive the selection of countries in which the regulatory and institutional environment favors well-functioning credit markets.

In the spirit of Rajan and Zingales' original assumption, three broad industry groupings – Manufacturing, Services and Retail – are chosen as the first category to benchmark MSME financing profiles. In addition, departing from their assumption, two additional layers of disaggregation are introduced, namely the size and age of MSMEs.

The additional granularity introduced by these two categories within an industry is based on guidance from the existing literature. An extensive literature review has shown that smaller firms tend to be more financially constrained than their larger counterparts (Beck and others 2005, 2006, and 2008; Cressy 2002; IADB 2004; and Schiffer and Weder 2001). Meanwhile, younger firms are more likely to struggle in a credit environment that lacks a strong regulatory environment because they have shorter credit histories and typically do not have established relationships with lenders (Berger and Udell 1995; Chakrobarty and others 2006; Cole 1998; Ezeoha and Botha 2012; and Steijvers and others 2009).

The firm-level information regarding the amount of borrowing by typical firms within these categories in the ten benchmark countries is provided by Bureau van Dijk's ORBIS database. It is a commercial dataset, which contains administrative data on balance sheets and income statements for over 130 million firms worldwide. The ORBIS database harmonizes the collected data into a standard "global" format that facilitates within and cross-country comparisons of firms. Work done by Kalemli-Ozcan and others (2015) to determine the representativeness of the ORBIS database on firms in select European countries finds that ORBIS covers 75-80 percent of the economic activity reported in Eurostat. It also matches the official size distribution of firms provided by Eurostat.

For each of the three categories described above, the mean debt-to-sales ratio is computed across firms in the ten countries. Debt is the sum of short-term loans[12] and long-term debt.[13] Other non-current liabilities, such as trade debts, are not included. Sales refers to the operating revenues of the company. To limit the effect of outliers, the top and bottom 5th percentile of the distribution of the variables is omitted from the analysis. The assumption inherent in the benchmarking relies on an unconstrained business environment that allows for a true financial equilibrium to emerge. Therefore, the post-global financial crisis years from 2011-2015 are selected. The final dataset contains over 800,000 observations. Table 1 summarizes the computed mean debt-to-sales ratio for the intersection of each of the three categories.

The summarized table 1 conforms to prevalent understandings of MSME financing needs in various categories. Young firms, defined as firms that commenced operations within five years, require more credit than their more mature counterparts within the same size and industry categories. For young firms, an increase in size is generally correlated with higher financing needs, whereas the opposite holds true for more mature firms. On average, holding other variables constant, MSMEs in the retail sector obtain the least amount of financing.

An implicit assumption in the benchmarking exercise is that the observed use of financing by firms in these economies represents the actual demand. Furthermore, for the benchmarked countries, an additional supposition is that there is no potential demand beyond the actual demand. In other words, there is no MSME finance gap in these countries.

Table 1: Mean Debt-to-Sales Ratios

Size of MSME (employees)[a]	0 to 9		10 to 19		20 to 49		50 to 99		100 to 249	
Age of MSME	Young	Mature	Young	Mature	Young	Mature	Young	Mature	Young	Mature
Manufacturing	0.34	0.28	0.32	0.22	0.33	0.21	0.31	0.20	0.34	0.19
Retail	0.25	0.21	0.22	0.17	0.22	0.16	0.25	0.14	0.31	0.14
Services	0.25	0.28	0.24	0.23	0.31	0.24	0.52	0.28	0.52	0.32

Source: MSME Finance Gap study calculations (based on the Orbis dataset).

a. There is significant variation in the definition of MSME size categories and 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 micro enterprises as those with less than 10 employees, and MSMEs as those with less than 250 employees. This is the most widely used definition in the publications, and according to research by IFC's MSME Country Indicators (2014), the most widely used definition by individual countries.

14. The variables name in ORBIS is LOAN, and is defined as short-term financial debts (for example, to credit institutions), plus part of long-term financial debts payable within the year.

15. The variables name in ORBIS is LTDB, and is defined as long-term financial debts with maturities longer than a year (for example, to credit institutions) in the form of loans and credits. LTDB stands for Long-Term Debt.

Step 2: Potential demand for MSME finance

The second step of the methodology entails applying the ratios obtained in the first step to the universe of MSMEs in each category for all emerging economies. The World Bank Enterprise Surveys furnish this data in a consistent and comparable manner across countries.

The Enterprise Surveys use a common questionnaire and a uniform sampling methodology to produce survey data about manufacturing and service sector firms that are comparable across countries. In total, 133 emerging economies are covered by the Enterprise Surveys. Stratification of the sample is based on three criteria: sector, firm size (the number of employees), and geographic location. The stratified random sampling methodology is used to generate a sample large enough to be representative of the non-agricultural, formal private economy, as well as key sectors and firm size classifications.

For the purpose of this methodology, it is crucial that the Enterprise Surveys provide estimates of the universe of MSMEs within each category using the survey weights. In essence, for each of the 30 categories shown in table 1, the Enterprise Surveys provide estimates for both the average sales and the total number of firms. When applying the benchmark ratio of each category to the average sales and total number of firms estimated by the Enterprise Surveys, summing up across the economy produces the potential MSME demand for financing in each country.

An estimation issue was identified when comparing total sales calculated for the universe of firms through the Enterprise Survey with known total aggregates from other sources. For example, for the manufacturing sector, the United Nations Industrial Development Organization (UNIDO) provides total sales (disaggregated by the International Standard Industrial Classification [ISIC] industry classification) for a large array of countries. Similarly, for the service sector, the World Bank's World Development Indicators (WDI) provide the total value added by the service sector (a lower-bound on sales). Using these comparisons, the total sales for each of the categories under the respective industries was scaled up to compensate for non-universal coverage of the Enterprise Surveys.[16]

The resulting potential demand for each country is interpreted as the hypothetical equilibrium amount of financing for MSMEs in the country as a result of higher firm demand, as well as the higher propensity by financial institutions to lend given their operations in an institutional, regulatory and macroeconomic environment similar to that of the benchmarked countries.

Step 3: Existing supply of MSME finance

Existing lending to MSMEs by financial institutions is available from two data sources, namely the IMF's Financial Access Survey (FAS), and the OECD's SME Scorecard.[17] Both FAS and OECD instruct monetary authorities to provide MSME data using their own local definition that reflects the local banking context.

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16. In many countries, under-sampling by the Enterprise Survey is a known issue because, for example, of the sizes of the economies and available sampling resources. The population of firms covered by the Enterprise Surveys does not include firms with fewer than 5 employees, as well as agriculture, extractive industries, personal services, financial services, education, healthcare, and utilities, among others.

17. Other data sources reporting supply side data for microenterprises in particular were also considered. These included, for example, data collected as part of the MIX Market Partnership and the GSM Association (GSMA).

The FAS is a cross-country, aggregated, supply-side database pertaining to access to, and the use of, financing and financial services by resident households and nonfinancial corporations, including by MSMEs. The FAS is administered annually and data is collected from national regulators and supervisors based on the IMF's guidelines and survey formats. The FAS covers commercial banks, credit unions and financial cooperatives, deposit-taking microfinance institutions, as well as other non-deposit-taking financial corporations. The OECD's *Financing SMEs and Entrepreneurs* report (2017) provides information on debt, equity, asset-based finance, and framework conditions for SME and entrepreneurship finance in 39 countries. When available, the FAS is the primary data source, and data from the OECD's SME Scorecard is used to augment any missing data.

Relevant to the analysis at hand, both datasets provide lending information specifically related to MSMEs. Although almost all countries report total lending activities, only 52 countries report disaggregated MSME lending through the FAS. The MSME lending volume for another 15 countries not covered by FAS is available through the OECD's SME Scorecard. The reported MSME lending volumes were compared to total lending as well as private sector credit provided by the financial sector (IMF) to identify outliers. For countries where the ratios were too high or too low,[18] the MSME lending data was substantiated through their central banks or through public information from statistical agencies. Furthermore, for another 3 countries not reporting to FAS or the OECD, MSME lending data was ascertained from credible country sources. The total MSME lending volume data is available for 71 countries.[19]

For the remaining countries, a regression framework is proposed to predict the missing MSME volume. The following cross-sectional ordinary least squares (OLS) regression is estimated using country-level data:

MSME Lending= α{*MSME*} + β{*Macro*} + γ{*Banking*} + η   *(1)*

The dependent variable is the log of the current MSME lending in the country. *MSME* refers to a vector of country characteristics relating to MSMEs, specifically the number of MSMEs as a percentage of the total, the share of MSMEs with access to external financing, and the MSME lending volume as a percentage of the total. All of these variables come from the Enterprise Surveys. Countries where there are more MSMEs in the economy, and where there is more access to finance, are expected to have higher MSME lending volume.

Macro refers to a vector of variables relating to the general macroeconomic environment, including population, GDP, and a dummy variable to indicate whether the country is fragile or conflict affected. All these variables are sourced from the World Bank's World Development Indicators. The first two macro variables relating to the size of the economy are general, positive predictors of MSME lending. The dummy variable reflecting fragility and conflict is expected to have a negative effect.

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18. In particular, the top and bottom 3 countries ranked by the ratios were considered for further substantiation. A few additional countries were chosen for further research when the ratios were flagged as an outlier for the country's income group.

19. These include both developed and emerging economies.

Finally, *banking* refers to a collection of variables relating to the banking, regulatory and institutional environment, including the lending interest rate (WDI); the Z score; the Lerner Index;[20] credit bureaus; movable collateral registry dummies; contract enforcement, and distance to frontier (DTF).[21]

The lending interest rate conveys information about the price of financing directly, and the Lerner index captures the market competition. A more competitive market is expected to serve MSMEs better, and have higher MSME lending volumes. Establishing a credit bureau or collateral registry has been shown to increase access to financing for MSMEs. The two remaining regulatory variables point to the general, enabling regulatory environment that may be conducive to lending overall. The η refers to robust standard errors. The use of logs helps deal with outliers and prevents negative predicted values. In addition, to reduce noise and increase observations, three-year averages of all variables are used.

The primary motivation for the regression and the choice of variables lies in their predictive power. As such, in a cross-sectional regression using aggregate country-level data, the volume of variables considered means that multicollinearity is potentially an issue. Thus, an interpretation of signs and estimate sizes is not prudent. However, the computation of the within-sample, mean absolute percentage error (MAPE) is used to confirm good fit and predictive power. In addition, a series of deliberately curtailed sub-sample regressions followed by "out-of-sample" predictions for countries omitted were conducted, and the MAPE was found to be satisfactory. As before, all predicted MSME lending volume ratios were compared to total lending, private sector credit provided by financial institutions, and GDP to check for the reasonableness of the ratios.

MSME Finance Gap

Bringing together the potential demand calculated in step 2 with the current supply collated/computed in step 3 produces the MSME finance gap for each country.

MSME finance gap = Potential demand – Existing supply   (2)

This is the MSME finance gap, assuming firms in a developing country have the same willingness and ability to borrow as their counterparts in well-developed credit markets and operate in comparable institutional environments — and that financial institutions lend at similar intensities as their benchmarked counterparts.

Disaggregating by Firm Size and Gender Ownership

The nature of the calculation lends itself readily to calculating the potential demand for microenterprises and SMEs separately in step 2. Following the World Bank Group's definition of classifying firms employing less than 10 permanent workers as microenterprises, the aggregations of potential demand are done

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20. These two variables are banking sector stability and competition variables from the World Bank's Global Financial Development Database.

21. These three variables are provided by the IFC's Doing Business dataset. DTF refers to the "Distance to Frontier" rating mechanism of the Doing Business dataset. "The distance to frontier score aids in assessing the absolute level of regulatory performance and how it improves over time. This measure shows the distance of each economy to the "frontier," which represents the best performance observed on each of the indicators across all economies in the Doing Business sample since 2005." http://www.doingbusiness.org/data/exploretopics/starting-a-business/frontier

separately for firms with less or greater than 10 employees. Separating out current volumes of micro-enterprise and SME lending is trickier. As no cross-country data with broad coverage of this disaggregation is available, the share of lending to microenterprises as compared to SMEs from the Enterprise Surveys was used to extrapolate separate current lending volumes. Finally, the microenterprise and SME finance gaps are computed, as in equation (2) above.

The disaggregation of the finance gap for female- and male-owned firms is not as straightforward. A stronger assumption is used in disaggregating the microenterprise and SME finance gaps respectively into female- and male-owned enterprises, respectively. It uses the gender-owner firm's share of overall sales as computed using data from the Enterprise Surveys. An important consideration is the classification of female- and male-owned firms. The IFC uses a definition that partly relies on a majority ownership stake by women to classify MSMEs as female-owned. In recent surveys, the Enterprise Survey has started collecting information about ownership percentages. However, the older surveys do not contain this information, and only indicate if *any* of the owners are female. This presents two possible options for the definition of female ownership:

- **Option 1:** At least 50 percent female ownership, OR Sole Proprietorships that are female-owned, OR female participation in ownership and management (top manager).

- **Option 2:** Sole Proprietorships that are female-owned, OR female participation in ownership and management (top manager).

Gender disaggregation using both of these definitions can be calculated. For cross-country comparisons across all emerging economies, the second option is suitable. The first option conforms to IFC's definition even though the first criteria based on ownership percentages can only be applied to about 70 percent of the countries. The analysis presented in this report is based on Option 1, however the data for both options are available for download from http://www.smefinanceforum.org/data-sites.

Informal Finance Gap

Cross-country data with broad coverage about the universe of informal firms, their economic activity and their financing sources is not available.[22] Both demand-side and supply-side data are missing. As such, estimating the finance gap for the informal MSME sector is extremely difficult. Schneider (2012) is an oft-cited paper that estimates the size of the informal economy. The author defines the "shadow" economy as part of the economy that "includes all market-based legal production of goods and services that are deliberately concealed from public authorities for a variety of reasons." (Schneider 2012, 6).

Armed with assessments of the size of the informal economy, it is still far from a straightforward exercise to arrive at an estimate of the informal firm finance gap. A stronger assumption regarding the demand for financing by informal firms compared to their formal counterparts has to be made. Under the more idealized institutional and regulatory environment that underlies all computations of the formal firm finance gap, it is perhaps reasonable to assume that informal firms of similar sizes and sales as their formal counterparts would have similar financing needs. Thus, the potential demand for the formal sector is used to proportionally extrapolate the potential demand for the informal sector.

Using this extrapolation, a stronger implicit assumption is made regarding the structure of the informal economy in terms of similarity of industry distribution to the formal economy. The final step of computing the current volume and estimating the gap is neither feasible nor relevant. Presumably, the amount of formal lending to informal firms is close to zero. Thus, the potential demand is the more relevant metric to articulate the financing gap that may potentially arise if and when these firms formalize and become serviceable by formal financial institutions.

Number of Credit-Constrained Enterprises

This report also complements the MSME finance gap by computing the number and percentage of credit-constrained MSMEs.

There are a number of approaches that can be used to potentially identify whether a firm is credit constrained. In the World Bank's Enterprise Surveys, for example, the firms are asked to self-rate the perceived scale at which financing presents an obstacle. As a subjective measure, this identification is problematic. Another approach is to look at firms that do not currently have a loan, a line of credit or overdraft protection. Identification solely based on usage is problematic because firms without current financing may not require external financing. Thus, a more robust and multidimensional identification strategy is required.

The estimation of the number of credit-constrained enterprises in this report relies on a proposed measure by Kuntchev and others (2014). Based on a variety of questions (see box 1) regarding both usage of and the ability to obtain new credit, enterprises are categorized as fully credit-constrained (FCC), partially credit-constrained (PCC), and not credit-constrained (NCC) firms. Credit-constrained firms are defined as those that are fully constrained (FCC) or partially constrained (PCC).[23]

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22. The Enterprise Surveys have included a few surveys of the informal sector, but do not provide broad coverage across countries.

23. The data regarding categorization is based on current conditions faced by enterprises. For example, the categorization of enterprises as not credit constrained (NCC) is only valid over the short run. Given macroeconomics and regulatory changes, or changes in product offerings, these enterprises may demand more credit and potentially cease to be NCC. As noted, the Enterprise Surveys only sample firms with 5 or more employees. Thus, the computation of the fraction of microenterprises belonging in each credit constraint category is based on this sample. Under the assumption that smaller microenterprises face similar constraints, the computed percentages are applied to the overall microenterprise population in the country.

Box 1. Credit-Constrained Enterprises: Methodology

The figure below provides a schematic representation of the approach to define credit-constrained enterprises. Definitions of the various categories are included below the figure.

Fully credit-constrained (FCC) firms are defined as those that find it challenging to obtain credit. These are firms that have no source of external financing. They typically fall into two categories: those that applied for a loan and were rejected; and those that were discouraged from applying either because of unfavorable terms and conditions, or because they did not think the application would be approved. The terms and conditions that discourage firms include complex application procedures, unfavorable interest rates, high collateral requirements, and insufficient loan size and maturity.

Partially credit-constrained (PCC) firms are defined as those that have been somewhat successful in obtaining external financing. PCC firms include those that have external financing, but were discouraged from applying for a loan from a financial institution. They also include firms that have an external source of financing, and firms that applied for a loan that was then partially approved or rejected.

Non-credit-constrained (NCC) firms are those that do not appear to have any difficulties accessing credit or do not need credit. Firms in this category encompass those that did not apply for a loan as they have sufficient capital either on their own or from other sources. It also includes firms that applied for loans that were approved in full.

There are limitations to the credit constraint indicator. The indicator does not incorporate any information about the creditworthiness of the firm. Therefore, among the credit-constrained firms, there may be some that were rationed for good reasons, such as insufficiently productive projects or a poor repayment history.

Correspondence betweens red constrained groups and questions in Enterprise Surveys
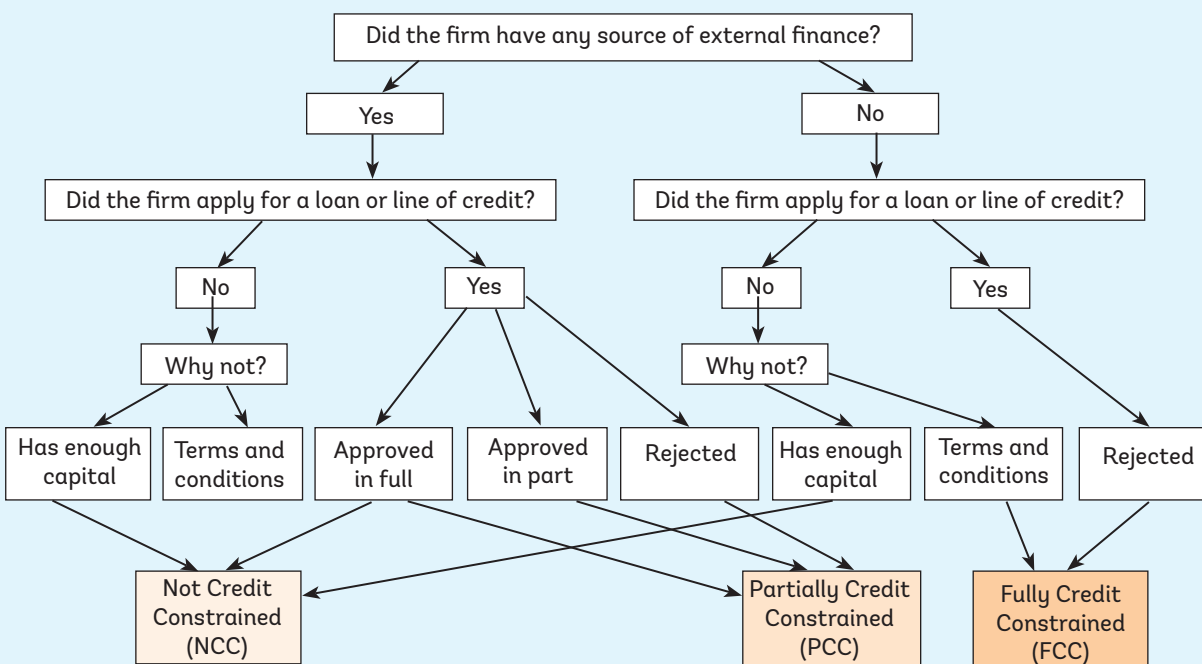
Source: Kuntchev and others (2014)

This report relies on the consolidated statistics provided by the MSME Country Indicators (IFC 2014) for ascertaining the number of enterprises in each country. This information is available for the number of microenterprises in 66 countries and for SMEs in 59 countries. For an additional 15 countries, the data has been collected directly from government sources. For the remaining countries, it has been estimated based on the World Bank's Enterprise Surveys (see box 2 below).

Box 2. Estimation of the Number of MSMEs based on the World Bank Enterprise Surveys

The number of MSMEs is extrapolated from Enterprise Survey (ES) data when Country Indicator (CI) data are not available, and an Enterprise Survey has been conducted recently. ES data alone understate the number of MSMEs because the ES only covers a subset of the population of existing enterprises. Specifically, the ES covers the formal, registered private sector of manufacturing and services firms. It does not include firms with fewer than 5 employees, as well as those pertaining to mining, oil and extractives, financial intermediation, utilities, healthcare, or education.

This report compares ES to CI data for 65 countries where both exist. It finds that the ES to CI ratio averages 0.34 to one for SMEs and 0.065 to one for microenterprises. For the subset of countries where CI data is not available (but ES data is), the ES numbers are scaled by these ratios to estimate the number of establishments in each. For example, if the ES estimates that 500 SMEs exist in country X, 500 is scaled by 0.34 to extrapolate that there are 1471 (500/0.34=1471) SMEs in country X.

Source: MSME Finance Gap study calculations, World Bank Enterprise Surveys.

IV. Quantifying the Finance Gap

Number of Enterprises

There are close to 162 million formal micro, small and medium enterprises (MSMEs) in developing countries, of which 141 million are microenterprises, and 21 million are SMEs (figure 1).[24] Three countries — Brazil, China and Nigeria — contribute 67 percent to the total number of MSMEs, which is equivalent to 109 million enterprises. There are close to 12 million SMEs in China alone, which represents 56 percent of all SMEs in developing countries. China also has 44 million microenterprises, which represents 31 percent of all microenterprises in developing countries.

Figure 1. Number of MSMEs in Developing Countries, millions

MICROENTERPRISES
141.44

SMEs
20.75

TOTAL MSMEs
162.19
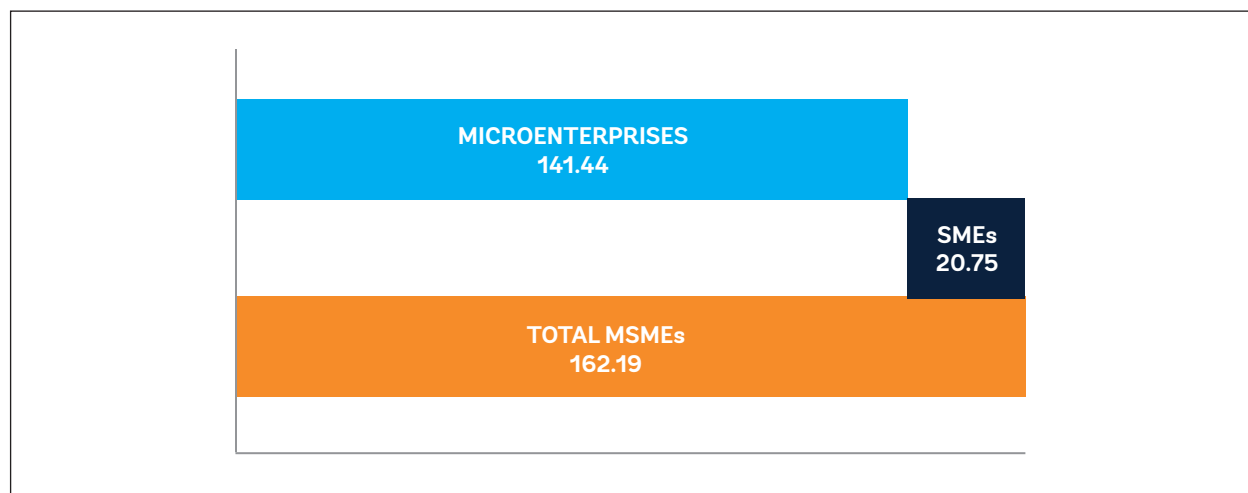
Source: IFC data and analysis.

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24. The number of enterprises is larger than reported in the IFC Enterprise Finance Gap (2011) due to the following: (1) country coverage has changed; (2) some countries (such as Brazil, China, Colombia, Nigeria, and Thailand, among others) improved data collection and the data quality in the MSME space, which yielded the larger officially reported number of MSMEs.

There is a large concentration of enterprises in the East Asia region (64 million), followed by Sub-Saharan Africa, which has 44 million MSMEs, the majority of which (97 percent) are microenterprises (see figure 2). Nigeria, which is a large contributor to the enterprise count in Sub-Saharan Africa, has 37 million MSMEs. Latin America and the Caribbean, which is the third largest region by number of MSMEs, has 28 million MSMEs, 26 million of which are microenterprises. This regional position is mainly driven by the large MSME segment in Brazil, which has 16 million MSMEs. In this regard, it is important to note that of the 132 countries for which the authors counted the number of businesses, this data has been determined by using the official country-level statistics for 96 and 74 countries, respectively. The data for the remaining countries has been extrapolated using the World Bank Enterprise Surveys.[25]

Figure 2. Number of Micro, Small and Medium Enterprises by Region
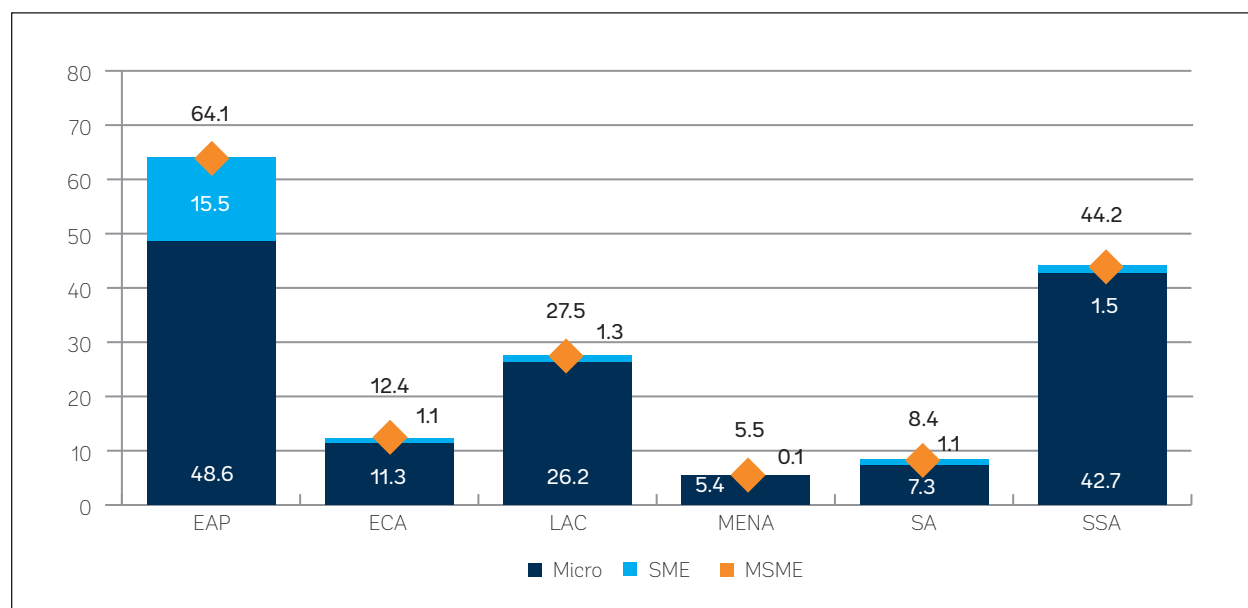
Source: IFC data and analysis.

Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; and SSA = Sub-Saharan Africa.

25. Refer to the Methodology Section of this report.

The number of MSMEs is the largest in Upper-middle-income countries, which includes Brazil and China – the two largest contributors (see figure 3). Lower-middle-income countries are the second largest category, which includes Nigeria – the third largest contributor.

Figure 3. Number of Micro, Small and Medium Enterprises by Country Income Group

Number of MSMEs, millions

Legend: Micro, SME, MSME

Source: IFC data and analysis.

Based on the approach explained in the methodology section of this report (box 1), it is estimated that in developing countries, 21 percent (29.6 million) of microenterprises are fully-constrained, and 19 percent (26.6 million) are partially constrained. However, 60 percent (85.2 million) remain financially unconstrained. A similar picture can be observed in the SME segment in developing countries. In this context, 30 percent (6.2 million) of SMEs are fully constrained, 14 percent (2.8 million) of SMEs are partially constrained, and 56 percent (11.7 million) are financially unconstrained. See figure 4.

Figure 4. Number of Financially-Constrained MSMEs

Number of Microenterprises

Unconstrained	85.2
Partly Constrained	26.6
Fully Constrained	29.6

Number of SMEs

Unconstrained	11.7
Partly Constrained	2.8
Fully Constrained	6.2
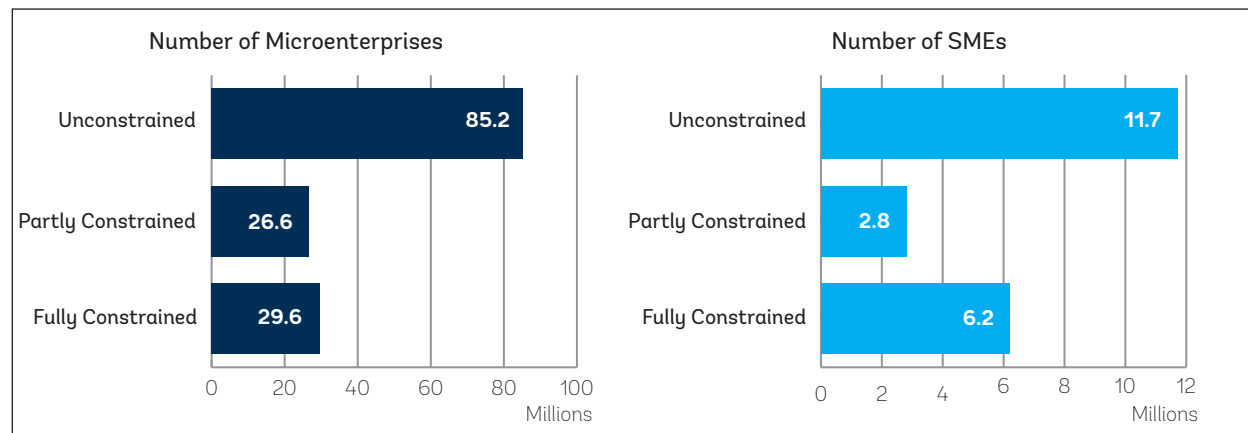
Source: IFC data and analysis.

Map 1 shows the regional differences in the number of financially-constrained enterprises among developing countries included in this report.

Map 1. Number of Financially-Constrained MSMEs Worldwide
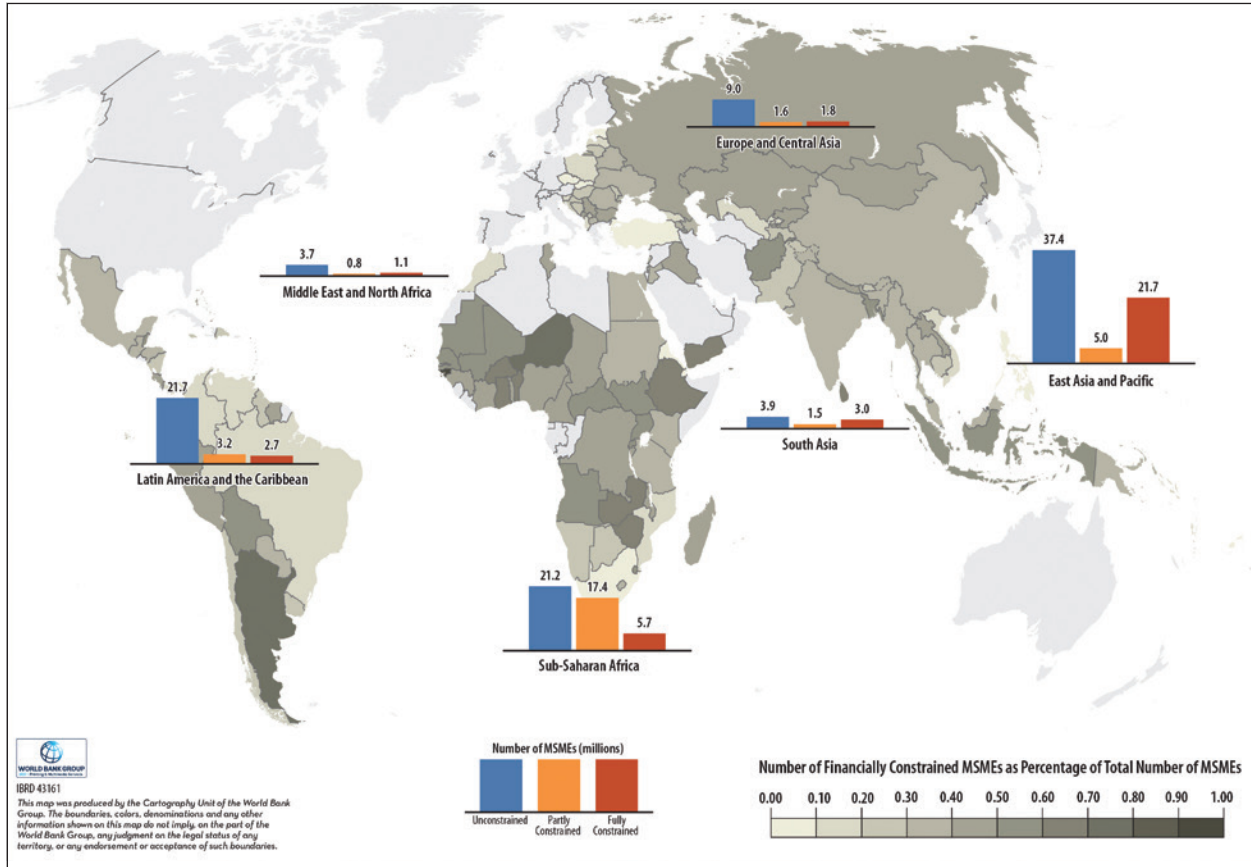
Source: IFC data and analysis.

Microenterprises

On average, 21 percent of microenterprises in developing countries are fully constrained, 19 percent are partially constrained and 60 percent are unconstrained. South Asia has the largest proportion of financially constrained microenterprises – both fully and partially constrained (54 percent), followed by Sub-Saharan Africa (52 percent). Latin America has the lowest proportion of financially constrained microenterprise firms (21 percent). Europe and Central Asian region has the second lowest proportion of financially constrained microenterprises (27 percent). See table 2 and figure 5.

Table 2. Distribution of Microenterprises by Financial Constraint Level (%)

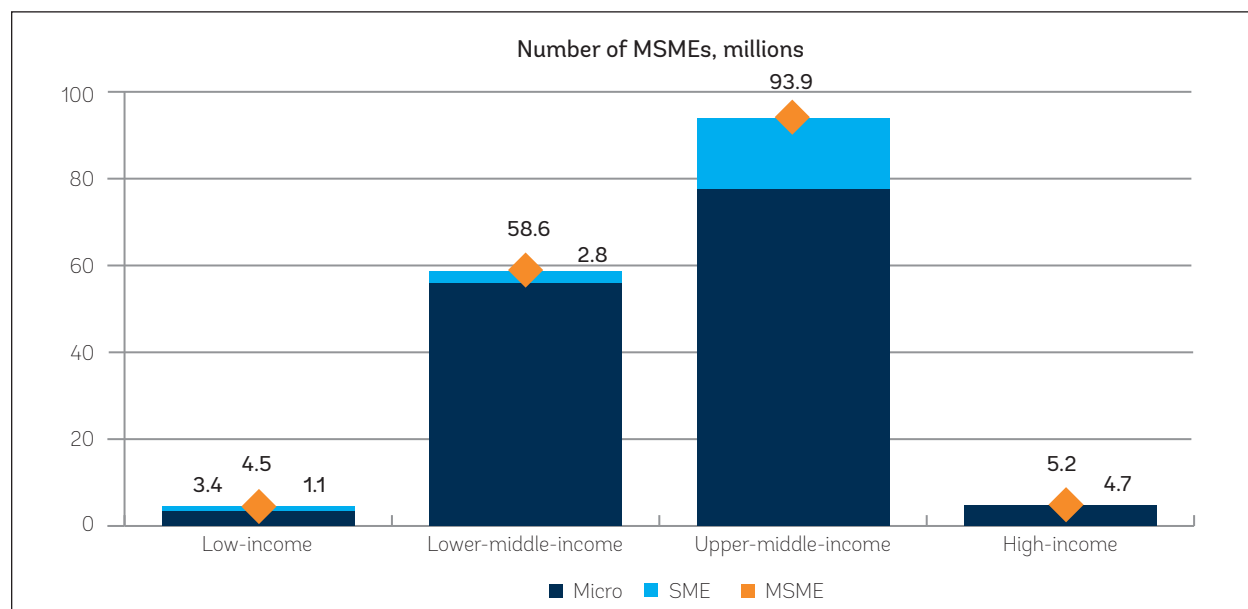| Region	Fully Constrained	Partly Constrained	Unconstrained
EAP	34	7	59
ECA	14	13	73
LAC	10	11	79
MENA	19	14	67
SA	37	16	46
SSA	12	40	48
Total	21	19	60

Source: IFC data and analysis.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; and SSA = Sub-Saharan Africa

Figure 5. Distribution of Microenterprises by Constraint Level
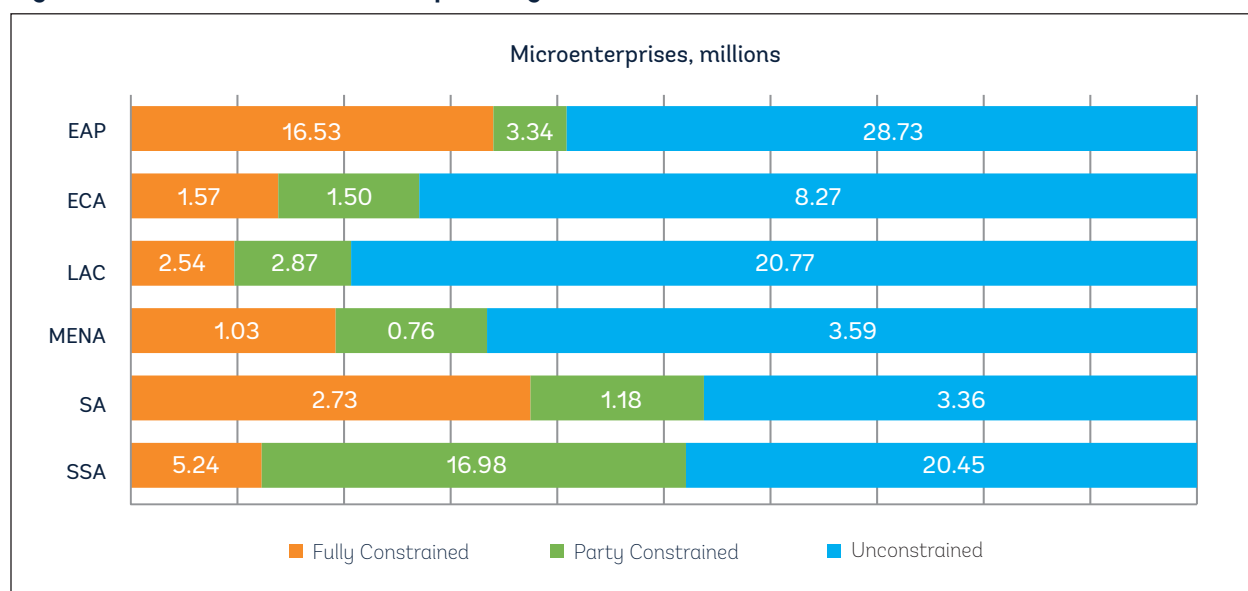
Source: IFC data and analysis.
Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; and SSA = Sub-Saharan Africa.

Small and Medium Enterprises

On average, 30 percent of SMEs in all developing countries are fully constrained, 14 percent are partially constrained and 56 percent are unconstrained. Sub-Saharan Africa has the largest proportion of financially constrained SMEs – both fully and partially constrained (54 percent), followed by South Asia (50 percent). Europe and Central Asia has the highest share of unconstrained SMEs (69 percent), with only 31 percent of firms fully or partially constrained. This is followed by the Latin America and the Caribbean region, with 68 percent of financially unconstrained enterprises and only 32 percent of fully or partially constrained enterprises. See table 3 and figure 6.

Table 3. Distribution of SMEs by Financial Constraint Level (%)

Region	Fully Constrained	Partly Constrained	Unconstrained
EAP	33	11	56
ECA	17	14	69
LAC	9	22	68
MENA	14	20	66
SA	24	26	50
SSA	28	25	46
Total	30	14	56

Source: IFC data and analysis.

Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; and SSA = Sub-Saharan Africa.

Figure 6. Distribution of SMEs by Constraint Level
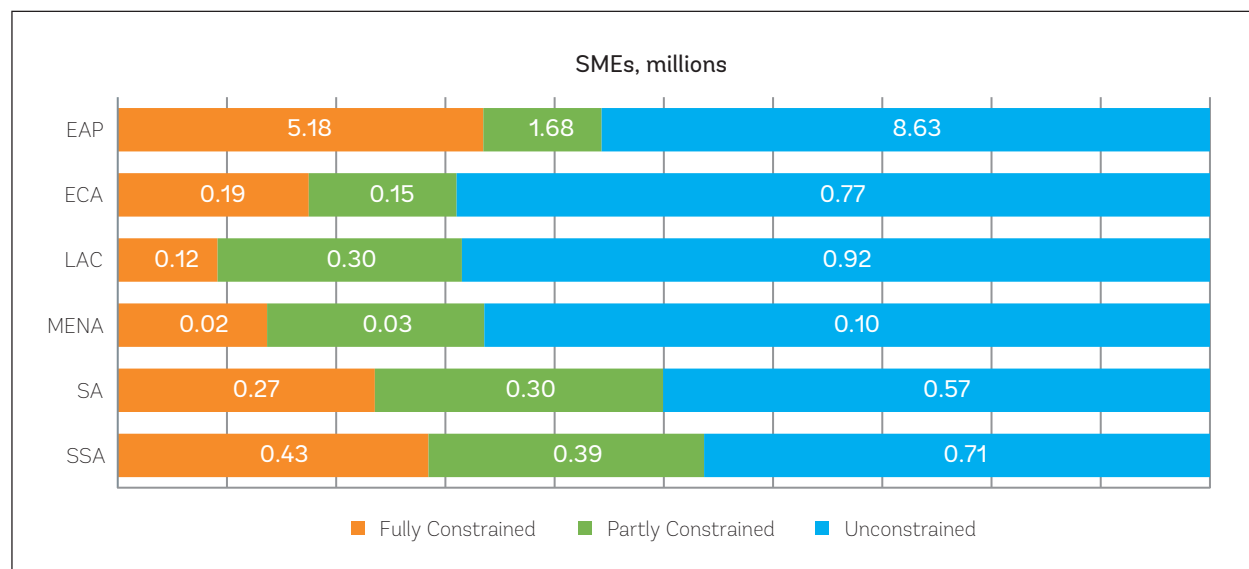
Source: IFC data and analysis.

Note: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; and SSA = Sub-Saharan Africa.

Micro, Small and Medium Enterprises – Distribution by Income Groups

Further analysis demonstrates that countries in the high-income group have the highest proportion of unconstrained micro, small and medium enterprises, that is, 81 percent (4.2 million MSMEs), with only 19 percent of financially constrained enterprises (one million). By contrast, countries in the low-income group have the largest proportion of fully or partially constrained MSMEs, that is, 67 percent (3 million MSMEs). Twenty-six percent of MSMEs in the Upper-middle-income countries are fully constrained (24.7 million), and 9 percent (8.2 million) partially constrained. Sixty-five percent of enterprises in this group are financially unconstrained (61.0 million). Finally, countries in the Lower-middle-income group have 15 percent (8.9 million) fully-constrained MSMEs, 33 percent (19.5 million) partially-constrained MSMEs and 52 percent (30.2 million) unconstrained MSMEs. These figures demonstrate greater market opportunities for financial institutions in the low and Lower-middle-income countries. See table 4.

Table 4. Distribution of MSMEs by Financial Constraint Level (%)

Country Income Group	Fully Constrained	Partly Constrained	Unconstrained
Low income	42	25	33
Lower-middle income	15	33	52
Upper-middle income	26	9	65
High income	7	13	81
Total	22	18	60

Source: IFC data and analysis.

Formal Finance Gap

Although the MSME segment is important for the global economy, data remains scarce, incomplete and fragmented. The present research attempts to complement existing data in the MSME space by estimating the potential demand for and current supply of MSME finance in order to determine the finance gap in 128 developing countries. This study finds that of a total of $8.9 trillion in potential demand for MSME finance, only $3.7 trillion is currently being supplied. See figure 7.

Figure 7. MSME Finance Gap

MSME Finance Gap, US$ trillions

Current Volume, 3.7 | Finance Gap, 5.2

Potential Demand, 8.9
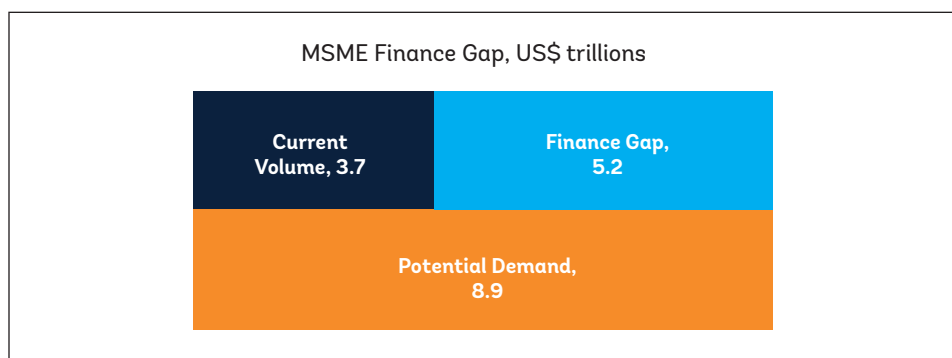
Source: IFC data and analysis.

The unmet demand for financing in the MSME segment in developing countries is valued at $5.2 trillion, which represents 19 percent of these countries' cumulative GDP. This finance gap suggests that 59 percent of potential demand for MSME finance is unmet. Potential demand represents a long-term indicator of the financing needs of MSMEs in developing countries. In this context, these needs can potentially be met only if public sector institutions create favorable conditions for business development, and if private sector financiers find appropriate approaches to serve MSMEs within constantly changing macroeconomic environments.[26]

The microenterprise finance gap is estimated at $718.8 billion, and the SME finance gap at $4.5 trillion. This unmet demand represents 81 percent of the potential demand from microenterprises, for a total of $882 billion. The unmet demand from SMEs is 56 percent of the potential demand for this segment, valued at $8.1 trillion. The total volume of current MSME financing is unevenly distributed between microenterprises and SMEs — with 96 percent attributed to SME finance, and only 4 percent to microenterprise finance.

Interestingly, the total MSME finance gap has a very different distribution, with a 14 percent share attributed to the microenterprise finance gap and 86 percent to the SME finance gap. Such imbalances indicate that microenterprises have relatively higher unmet needs from formal sources, which might be replaced with alternative sources, such as funding from friends and family, business partners, peer-to-peer markets or informal financing arrangements. Figure 8 illustrates the distribution of the potential demand by enterprise size and compares the current finance volume with the finance gap.

Figure 8. Potential MSME Finance Demand Distribution
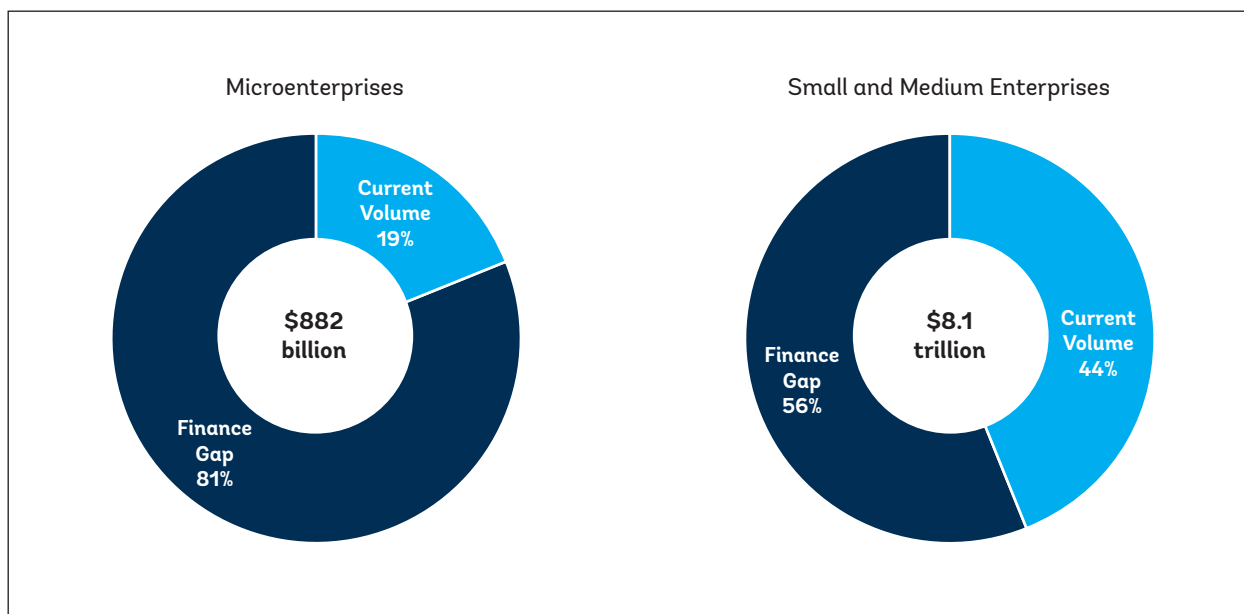
Source: IFC data and analysis.

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26. For one country in this analysis, Mauritania, the current volume of MSME finance is estimated at $611 million, and the estimated potential demand is $336 million. This results in a negative MSME finance gap of $275 million (the difference between potential and current needs). This may either reflect data issues or that MSMEs in the country are truly over-indebted.

Map 2 demonstrates the regional distribution of the MSME finance gap across developing countries.

Map 2. Formal MSME Finance Gap in Developing Countries
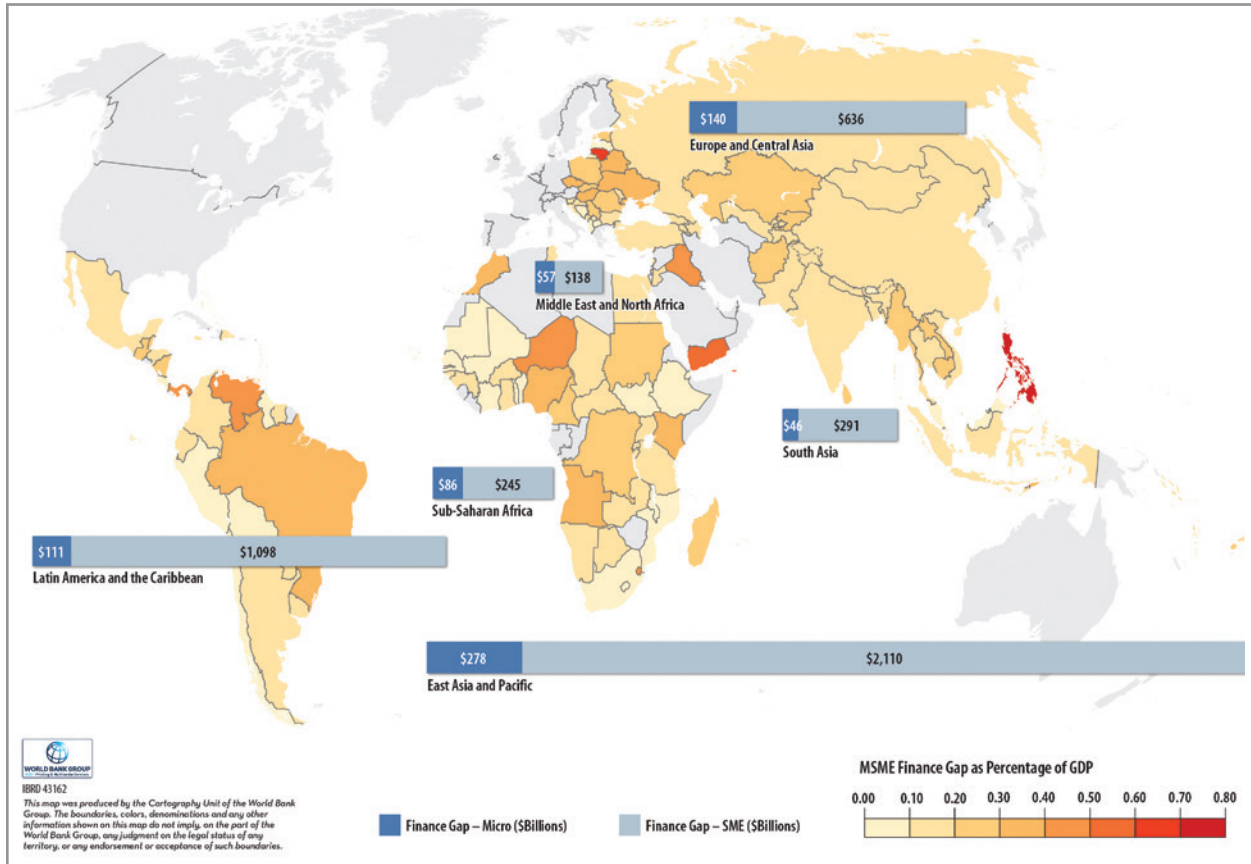
Source: IFC data and analysis.

Regional analysis of potential MSME demand demonstrates that it is highest in the East Asia and Pacific region – with almost 58 percent of the total global potential demand. This is mainly driven by the large demand and supply in China ($4.4 trillion and $2.5 trillion, respectively). The finance gap in Latin America and the Caribbean is the second largest after the East Asia region, and is mainly driven by Brazil ($0.6 trillion). India is another big contributor country, with a finance gap of $230 billion, representing 68 percent of the total gap in the South Asia region (figure 9).

Figure 9. Regional Distribution of MSME Potential Demand and Finance Gap (%)
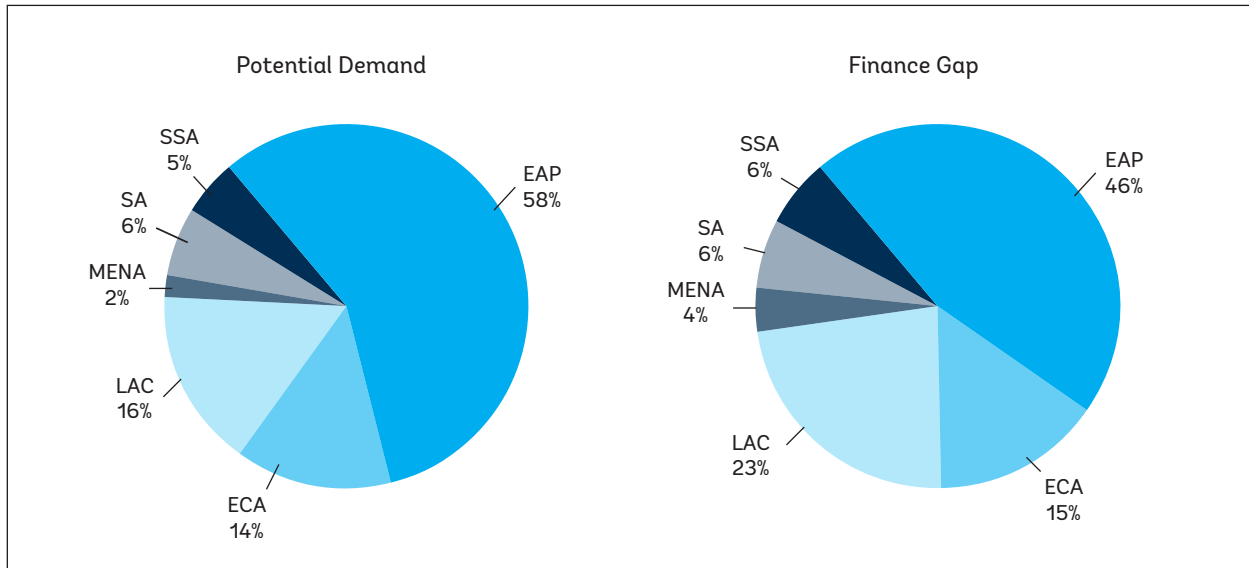
Potential Demand

- SSA 5%
- SA 6%
- MENA 2%
- LAC 16%
- ECA 14%
- EAP 58%

Finance Gap

- SSA 6%
- SA 6%
- MENA 4%
- LAC 23%
- ECA 15%
- EAP 46%

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

The country coverage in this study was driven by data availability in the World Bank Enterprise Surveys, which mostly cover developing countries. Sub-Saharan Africa has the largest number of countries (with 37 of the 128 countries), followed by Latin America and the Caribbean (with 30 of the 128 countries). The Middle East and North Africa and South Asia regions had the smallest number of countries: 8 and 7 countries, respectively. (See tables 5 and 6). However, the estimation model developed here does not depend on the country representation in the region.

Table 5. Country Coverage of Present Research

Region	Number of Countries in this Study	Number of Countries	Coverage (%)
EAP	17	38	45
ECA	29	58	50
LAC	30	42	71
MENA	8	21	38
SA	7	8	88
SSA	37	48	77
TOTAL	128	215	60

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa; WBG = World Bank Group.

Table 6. Regional Distribution of MSME Potential Demand and Finance Gap

Region	Number of Countries	Number of MSMEs, millions	Potential Demand, US$ billions	Current Volume, US$ billions	Finance Gap, US$ billions
EAP	17	64	5,142	2,755	2,387
ECA	29	12	1,279	503	776
LAC	30	28	1,395	185	1,209
MENA	8	5	221	26	195
SA	7	8	501	164	337
SSA	37	44	404	70	331
TOTAL	128	162	8,942	3,642	5,235

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

There is a wide dispersion with regard to the total MSME finance gap volume among regions. The highest proportion of the finance gap compared to potential demand can be found in both the Latin America and the Caribbean and the Middle East and North Africa regions – with 87 and 88 percent, respectively. The smallest proportion can be found in East Asia and Pacific – 46 percent (see figure 10). On average, the total MSME finance gap accounts for 59 percent of potential demand, with the remaining 41 percent of financing currently supplied by financial institutions.

Figure 10. MSME Finance Gap as a Proportion of Potential Demand (%)
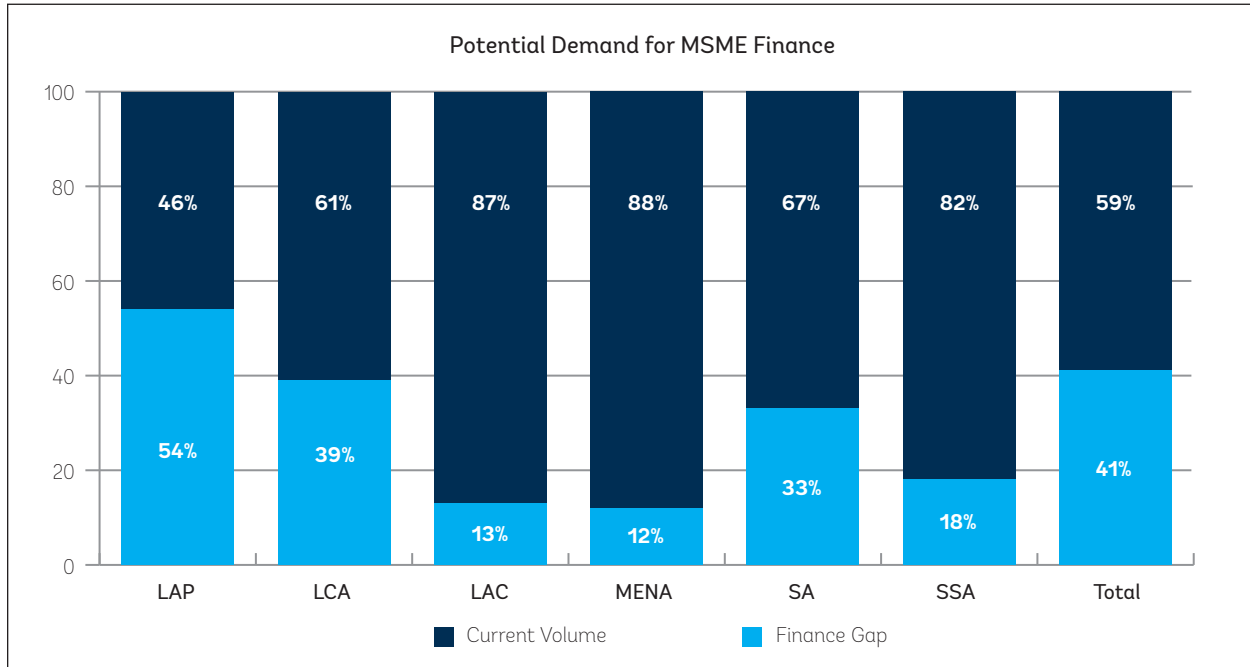
Potential Demand for MSME Finance

	LAP	LCA	LAC	MENA	SA	SSA	Total
Current Volume	46%	61%	87%	88%	67%	82%	59%
Finance Gap	54%	39%	13%	12%	33%	18%	41%

Source: IFC data and analysis

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA= Sub-Saharan Africa.

As shown in figure 11, SMEs represent 14 percent of credit-constrained MSMEs in developing countries, and account for 86 percent of the MSME finance gap. Microenterprises represent 86 percent of credit-constrained MSMEs in developing countries, accounting for only 14 percent of the MSME finance gap. The highest microenterprise finance gap is in the Middle East and Africa regions (over 20 percent), with the lowest in the Latin America and the Caribbean region (9 percent). When examining the proportion of the SME finance gap as compared to potential demand, the highest figures were found in Latin America and the Caribbean and South Asia regions (with 91 percent and 86 percent, respectively).

Figure 11. Finance Gap and Population of Enterprises (%)

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

The finance gap in Upper-middle-income countries constitutes close to 71 percent of the finance gap in the developing countries in this review. This can partially be attributed to the fact that over 30 percent of the countries (44 of 12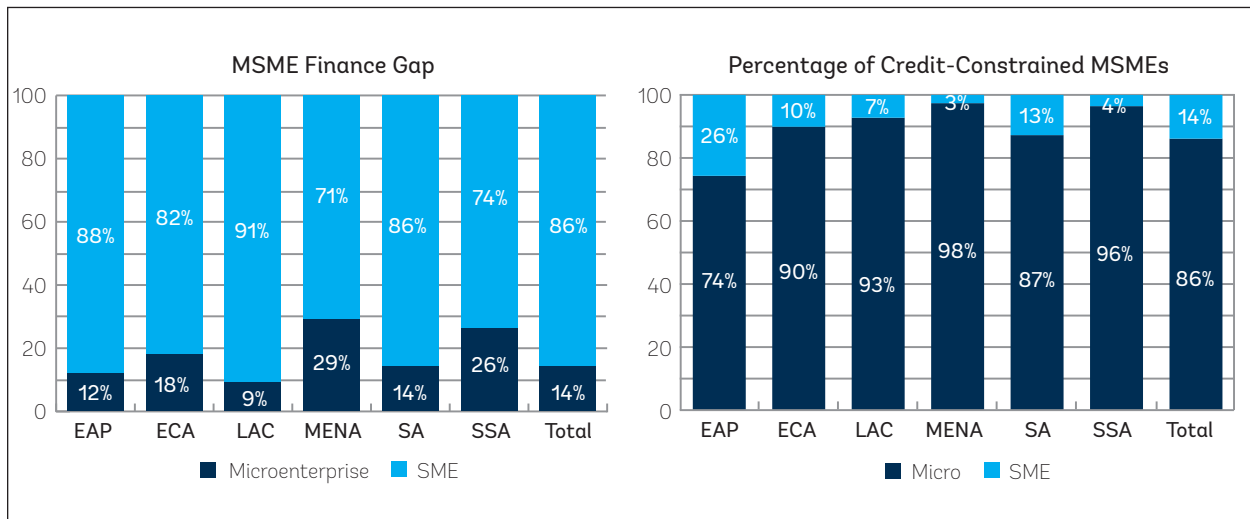8 countries) are in this category, and partially to the fact that China (which has a very high potential finance demand and gap) is one of the countries in this category. The Lower-middle-income countries, which have the largest country coverage (with 47 of 128 countries), have a total MSME finance gap of $1.17 trillion, with 24 percent attributed to microenterprises and 76 percent attributed to the SME finance gap (see figure 12).

Figure 12. Finance Gap according to Income Group

Finance Gap per Income Group, US$ trillions

Potential Demand per Income Group, US$ trillions

Source: IFC data and analysis.

Upper-middle-income countries account for 78 percent of potential demand and 71 percent of the finance gap. Fifty-eight percent of all MSMEs are in this category. Lower-middle-income countries have 36 percent of enterprises, and account for 16 percent of potential demand. They comprise 22 percent of the finance gap. High-income countries have 3 percent of MSMEs, and account for 5 percent of potential demand. They comprise 6 percent of the finance gap. Finally, low-income countries account for 3 percent of MSMEs, and 1 percent of both potential demand and the finance gap.

The finance gap as a proportion of potential demand is the highest in the low-income and lower-middle-income countries, with 80 percent in comparison with a total of 59 percent for all developing countries included in this study (see figure 13). The microenterprise finance gap as a proportion of the microenterprise potential demand is the highest in the lower-middle-income countries (94 percent), and lowest in the high-income countries (63 percent). The SME finance gap as a proportion of potential SME demand is highest in low-income countries (78 percent), as compared to 56 percent in all developing countries. The higher the proportion, the smaller the current lending volume. Thus, there is a larger opportunity for financial institutions to serve these enterprises in need. However, appropriate models must be established to tap into the potential returns and effectively manage the risks.

Figure 13. Finance Gap as Percentage of Potential Demand
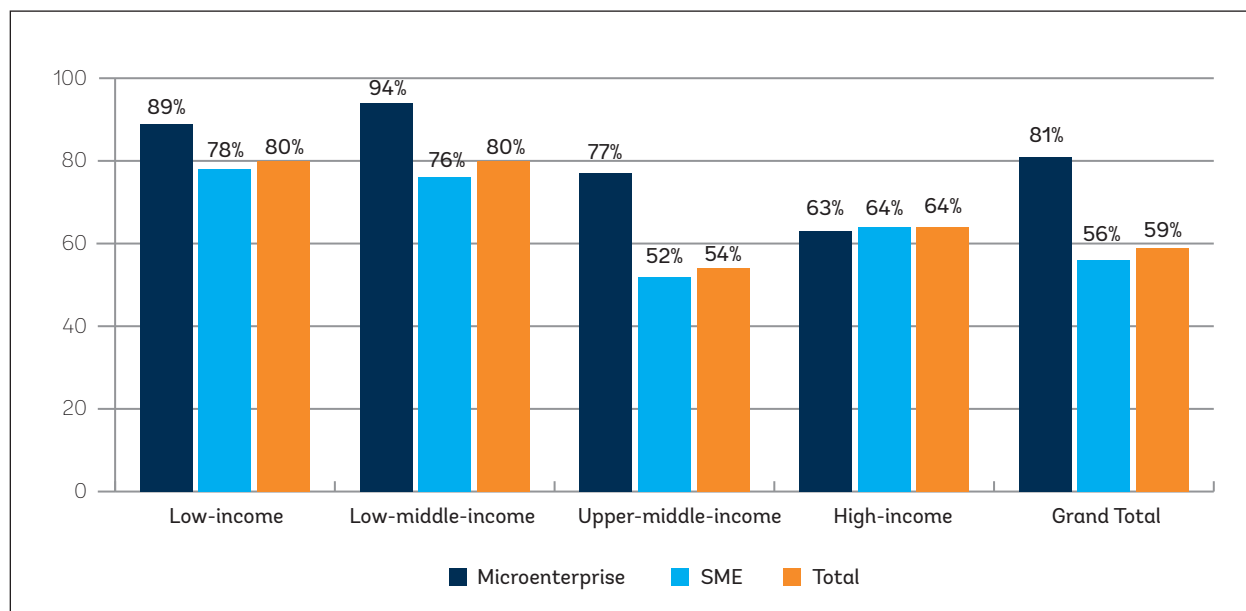
Source: IFC data and analysis.

In order to understand the scale of the estimated finance gap, it can be compared to the GDP of the countries under review. On average, the MSME finance gap represents 19 percent of individual countries' GDP. In lower-middle-income and high-income countries, this indicator is 20-21 percent. In upper-middle-income countries, it is 18 percent, and in low-income countries, it is 15 percent. Regionally, the dispersion of this indicator is more evident, with the highest being in the Middle East and North Africa (26 percent) and the lowest in South Asia and Sub-Saharan Africa (16% in each). Generally, the higher the ratio, the higher the need for financing in relation to the size of the economy. This, in turn, provides further incentives for financial institutions to tap into this market opportunity with the right tools and approaches.

Table 7a. Average Finance Gap as a Percentage of GDP (by region)

	EAP	ECA	LAC	MENA	SA	SSA	Total
Finance Gap / GDP	22	20	18	26	16	16	19

Table 7b. Average Finance Gap as a Percentage of GDP (by income group)

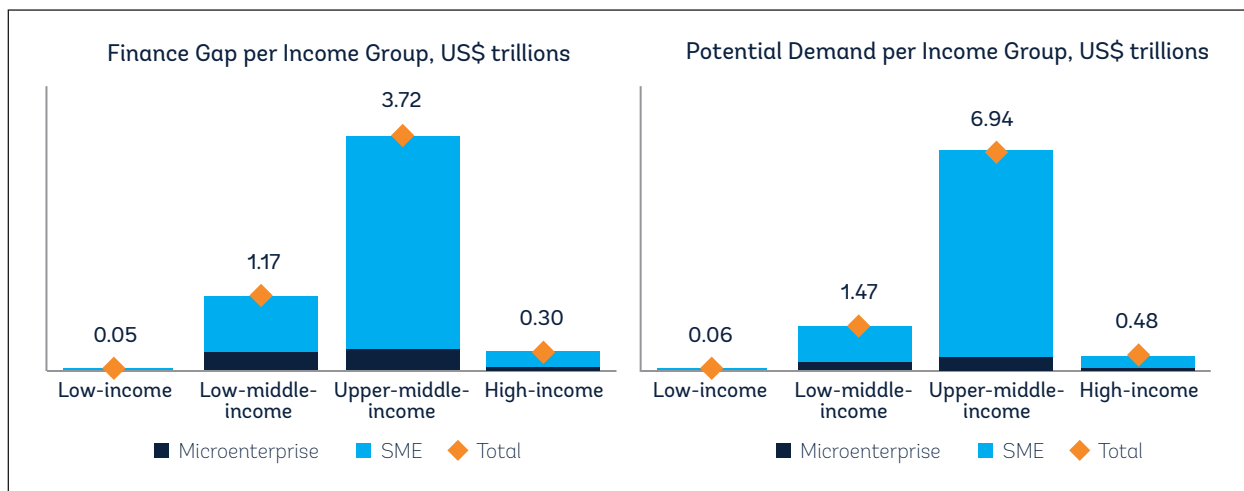|	Low income	Low-middle income	Upper-middle income	High income	Total
Finance Gap / GDP	15	21	18	20	19

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

Gender Finance Gap

Women-owned businesses comprise 28 percent of business establishments and account for 32 percent of the MSME finance gap. Female-owned MSMEs are generally smaller than their male-owned counterparts and thus employ fewer workers: 18-19 on average versus 21-22 at male-owned MSMEs. The total MSME finance gap for women[27] is estimated to be valued at $1.7 trillion, which is over 6 percent of total GDP. Despite their smaller average size, female-owned businesses account for an outsized share of the finance gap — with 24 percent of the total microenterprise finance gap ($173 billion) and 33 percent of the total SME finance gap ($1.5 trillion) attributed to these female-owned firms. (See figures 14 and 15, map 3, and tables 8 and 9).

Figure 14. Gender Composition of the Finance Gap
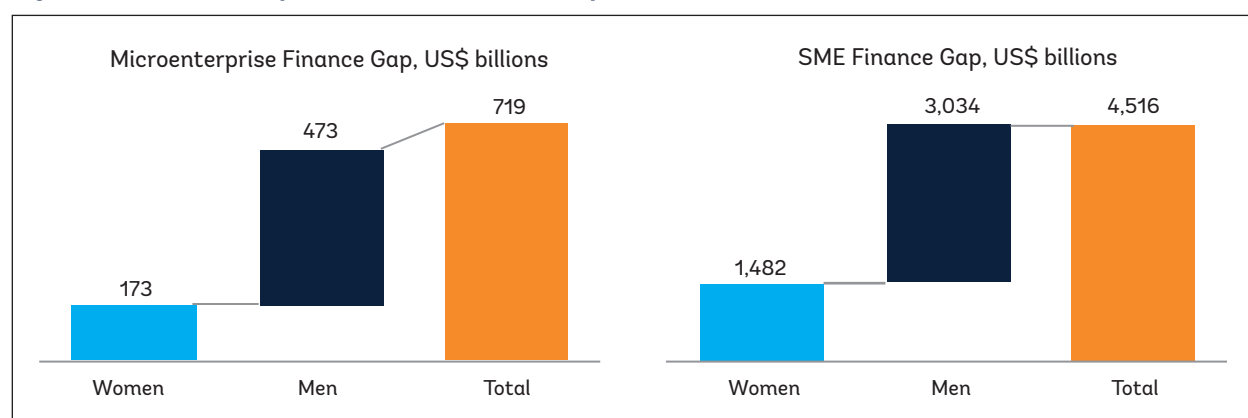
Source: IFC data and analysis.

Figure 15. Women MSME Finance Gap as a Percentage of Current Volume of Finance
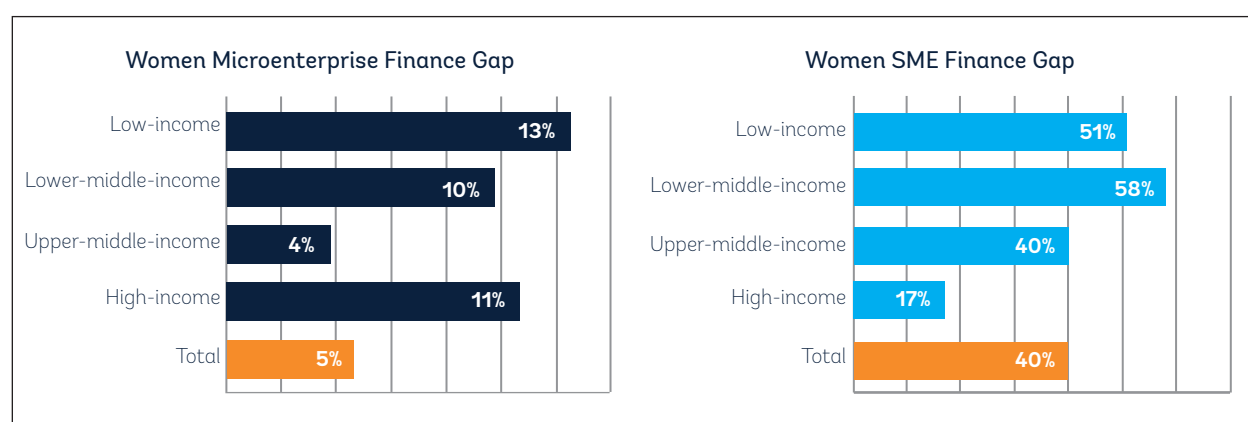
Source: IFC data and analysis.

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27. For the purposes of this analysis, a women-owned enterprise is defined as an enterprise that meets either of the following criteria: (1) at least 50 percent female ownership; (2) sole proprietorships that are female owned; and/or (3) female participation in ownership and management (top manager). Please, refer to the Option 1 in the Methodology section of this paper. The World Bank Enterprise Survey in three countries (Gambia, Mozambique, South Africa) has been conducted in 2006-2007 and did not contain extended questionnaire about the female participation in ownership and management. Therefore for these countries the authors have used only one indicator to define Women-owned enterprise, i.e. "Percent of firms with female participation in ownership"

Map 3. Formal MSME Finance Gap in Developing Countries attributed to Female Enterprises (US$ billions)
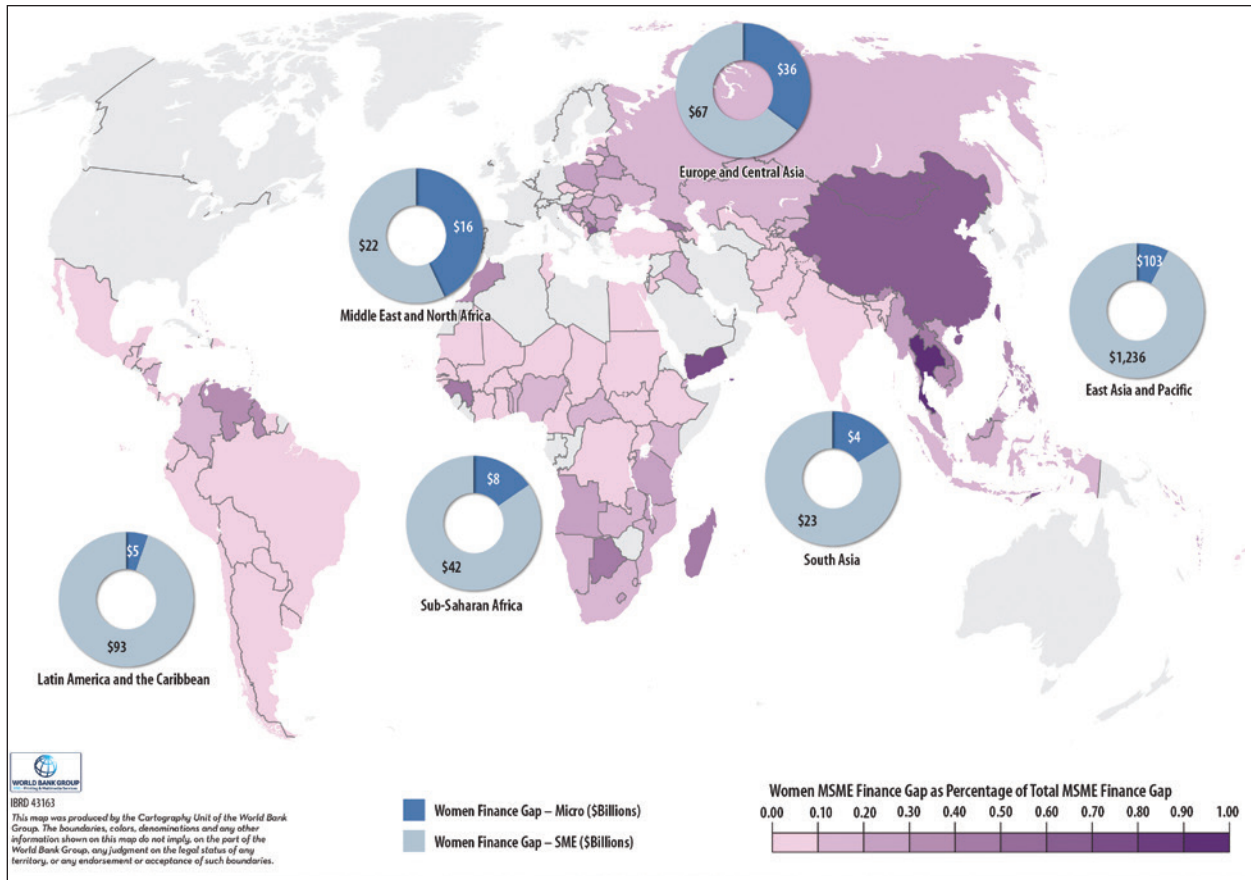
Source: IFC data and analysis.

Table 8. Top Five Countries: Microenterprise Finance Gap for Women as a Share of the Total Microenterprise Finance Gap

Microenterprise Finance Gap	Women Finance Gap, US$ million	Total Finance Gap, US$ million	Women Finance Gap, percentage
Morocco	12,672	14,138	90
Thailand	45,126	53,893	84
Benin	22	27	82
Kenya	823	1,086	76
Guinea	481	665	72

Source: IFC data and analysis.

Table 9. Top Five Countries by Share of SME Finance Gap for Women (to the total SME finance gap)

SME Finance Gap	Women Finance Gap, US$ million	Total Finance Gap, US$ million	Women Finance Gap, percentage
Yemen, Republic of	13,972	18,406	76
Timor-Leste	302	408	74
Micronesia, Federated States of	48	68	70
China	1,135,055	1,804,963	63
Mongolia	765	1.240	62

Source: IFC data and analysis.

East Asia has the highest proportion of the microenterprise finance gap attributed to women-owned businesses (37 percent, $103 billion). The Middle East and North Africa region has the second highest proportion of the female microenterprise finance gap (29 percent, $16 billion). The smallest proportion is in Latin America and the Caribbean (5 percent, $5 billion). (See figure 16).

Figure 16. Microenterprise Finance Gap: Women-Owned Enterprises
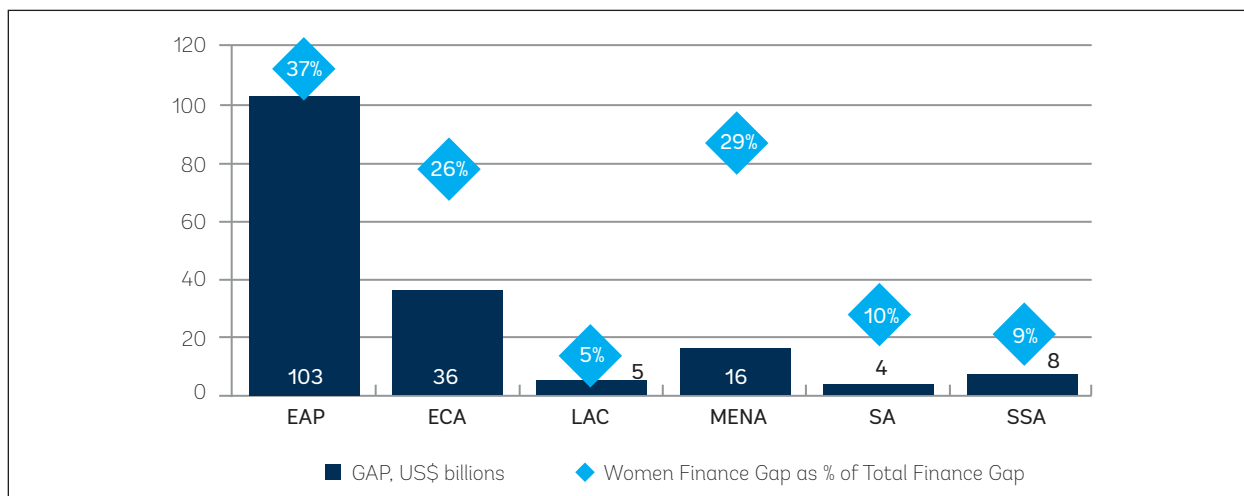
Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

East Asia has the highest proportion of the SME finance gap attributed to women-owned businesses (59 percent, $1.2 trillion). Sub-Saharan Africa region has the second highest proportion of the female SME finance gap (17 percent, $42 billion), while the smallest proportion is in Latin America and the Caribbean (8 percent, $93 billion), and South Asian regions (8 percent, $23 billion). See figure 17.

Figure 17. SME Finance Gap: Women-Owned Enterprises (US$ billions)

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

Potential Demand in the Informal Sector

Based on Schneider, Buehn and Montenegro's (2010) research, it has been established that the employment structure and other macroeconomic factors (such as taxation, the regulatory burden, social security, and income level) influence the shadow economy. Using their estimates of the shadow economy in 107 countries, the present research estimates that there is a $2.9 trillion potential demand for MSME finance in the informal sector in developing countries. This represents 11 percent of the GDP of these countries. Thus, the combined total formal and informal potential demand for MSME finance is estimated at $11.9 trillion in developing countries (see figure 18).

Figure 18. Potential Total Demand for MSME Finance

Formal and Informal Demand for MSME Finance, US$ trillions

2.9

8.9

11.9

Formal | Informal | Total
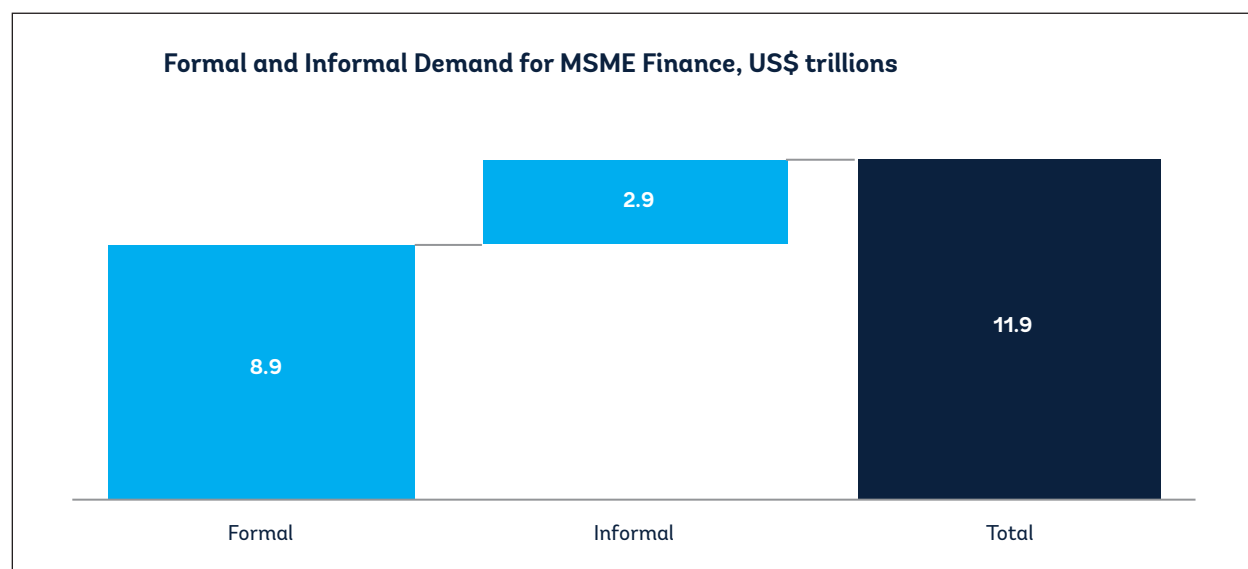
Source: IFC data and analysis.

The potential demand for MSME finance in the informal sector is the largest in East Asia and the Pacific region ($995 billion), followed by the Latin America and the Caribbean region ($756 billion). It is lowest in the Middle East and North Africa region ($69 billion). However, in absolute terms, the numbers might not be strictly comparable across regions because the informality data is available for only 110 countries of the 128 countries under review.[28] Comparing the average informal potential demand for MSME finance, it is largest in East Asia and the Pacific ($55.3 billion) and smallest in the Middle East and North Africa ($7.7 billion). (See figure 19 and map 4).

28. The number of regions with data about the informal MSME segment are as follows: 12 in EAP; 25 in ECA; 23 in LAC; 6 in MENA; 6 in SA; and 35 in SSA.

Figure 19. Informal Potential Demand for MSME Finance (total and average)
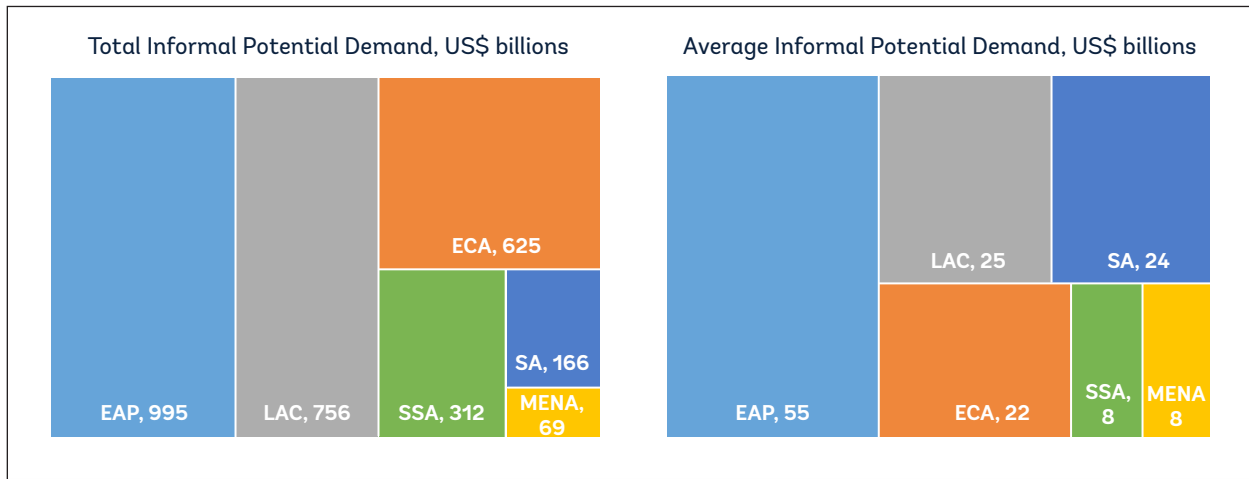
Total Informal Potential Demand, US$ billions

ECA, 625
SA, 166
MENA, 69
EAP, 995
LAC, 756
SSA, 312

Average Informal Potential Demand, US$ billions

LAC, 25
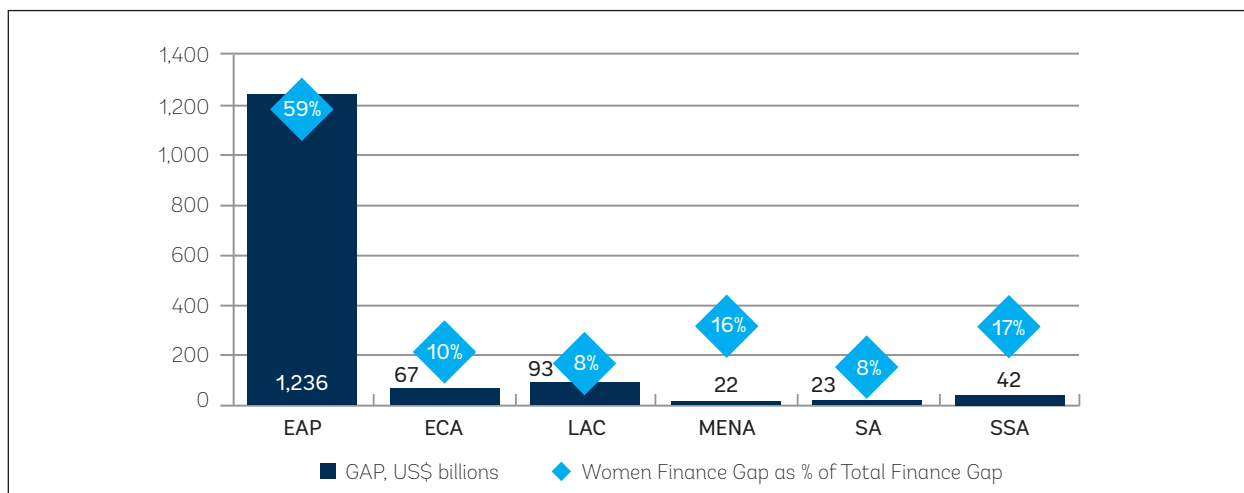SA, 24
SSA, 8
MENA 8
EAP, 55
ECA, 22

Source: IFC data and analysis.

Note: EAP = East Asia and the Pacific; ECA = Europe and Central Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

Map 4. Potential Demand in Informal Sector in Developing Countries
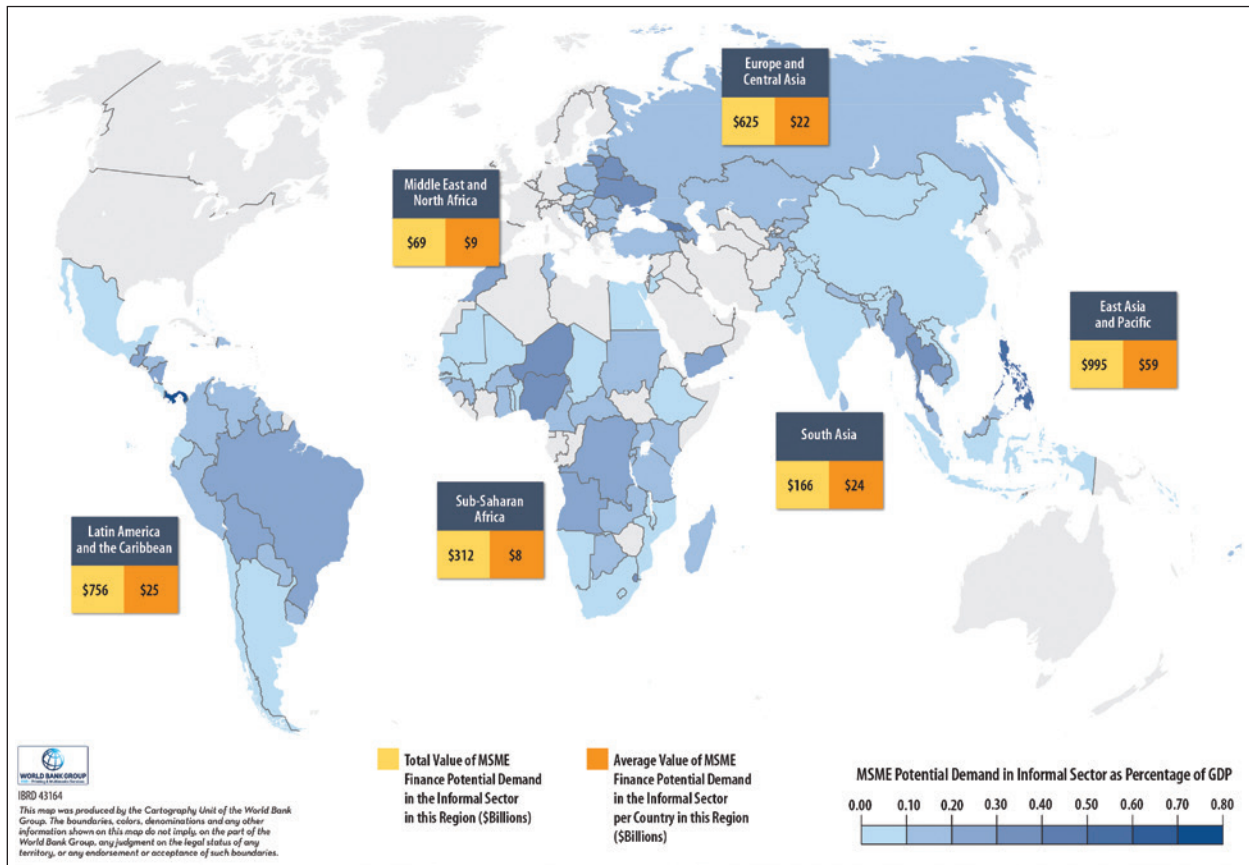
Source: IFC data and analysis.

Further comparison of the informal potential demand for MSME finance by country income groups demonstrates that it is highest in Upper-middle-income countries (which includes China) — $1998.0 billion, and lowest in the low-income countries — $44.9 billion, as shown in table 10.

Table 10. Informal Potential Demand for MSME Finance by Country Income Group

Income Group	Number of countries	Informal Potential Demand, US$ billion
Low income	21	44.9
Lower-middle income	36	729.6
Upper-middle income	37	1998.0
High income	13	151.0
Total	107	2923.6

Source: IFC data and analysis.

The informal potential demand for MSME finance as a percentage of the formal potential demand for MSME finance in developing countries varies greatly across country groups and regions. It averages 33 percent in the developing countries included in this review (110 countries). It is highest in lower-income countries (80 percent), which highlights the higher informality of markets in this category. It is lowest in the high-income countries (32 percent). Sub-Saharan Africa and the Latin America and the Caribbean regions have the highest informality. Indeed, informal potential demand represents 78 and 54 percent of formal potential demand in these regions, respectively (see figure 20).

Figure 20. Informal Potential Demand for MSME Finance (as a percentage of formal potential demand)
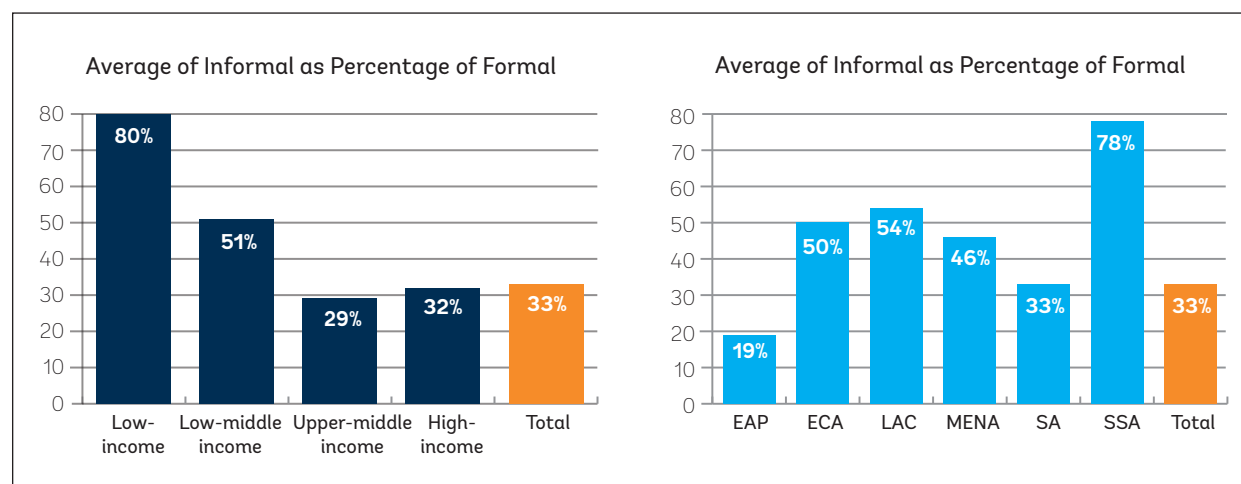
Source: IFC data and analysis.

V. Implications of the MSME Finance Gap

The Role of the Public Sector

Afundamental role of the government is to provide efficient regulation and supervision of the financial sector by creating an efficient regulatory framework. With respect to closing the MSME finance gap, two features are particularly important: the financial structure and competition. Recent studies indicate that more financially diverse markets are associated with improved access to finance.[29] Policy recommendations to support a more diverse financial landscape encompass improving competition within the financial system, thereby allowing for a variety of financial institutions to operate.[30] The broader regulatory environment, and in particular tax administration and governance, may also influence access to finance.[31]

Sometimes governments see direct intervention in the finance markets as a potentially useful tool. Commonly used direct government interventions include state-owned bank lending to MSMEs or directed credit. Success through these programs tends to be rare, but there are exceptions.[32] Providing credit guarantees is another common form of direct intervention. Policymakers encourage banks to lend to MSMEs by taking on some of the credit risk, either through guarantees for a portfolio of loans or for individual loans.

Risk-sharing arrangements can increase lending by lowering the amount of collateral that a MSME needs to pledge to receive a loan because the guarantor provides part of the collateral. Similarly, for a given amount of collateral, a credit guarantee can allow higher risk borrowers to receive a loan. However, a concern with risk-sharing arrangements is that they may not in fact lead to additional lending. Instead, banks may use guarantees to lower risk on loans that they would have issued anyway.

A recent study found that 76 countries around the world had some form of interest rate caps on loans (Munzele and Henriquez Gallegos 2014). Common reasons for imposing caps are to protect consumers from excessive interest rates, to make loans more affordable, and to increase access to finance. However,

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29. Beck, Demirgüç-Kunt, and Singer (2013) find that dominance of the financial system by banks is associated with a lower use of financial services by firms of all sizes. Other types of financial institutions, such as cooperatives and microfinance institutions (MFIs), seem particularly suited to easing access to finance in low-income countries.

30. Love and Martínez Pería (2015) find low bank competition together with diminished access to finance by firms.

31. Firms may choose informal finance over formal financing options when the regulatory environment is weak (Safavian and Wimpey 2007). The level of overall financial development also plays an important role for these SMEs by disproportionately increasing credit access for small and young firms (Chavis, Klapper, and Love 2010).

32. See the 2013 Global Financial Development Report. The bulk of empirical evidence suggests that government ownership of banks in developing economies has had negative consequences for a country's long-run financial and economic development (World Bank 2012).

studies have concluded that interest rate caps tend to decrease rather than increase access to finance, whereas market-oriented policies are more likely to be effective at improving access to finance.[33]

Policymakers can take additional, more market-oriented actions to close the MSME finance gap. These actions include: (i) fostering the availability of credit information by improving corporate accounting and supporting information sharing between parties, including lenders and utility companies; (ii) passing movable collateral laws and supporting collateral registries; (iii) improving insolvency regimes; (iv) strengthening the legal, regulatory, and institutional infrastructure for factoring and leasing; and (v) creating an enabling environment for fostering innovation.

The availability of detailed credit information with broad coverage is crucial for closing the SME finance gap. Firm financial statements and official documentation are essential parts of loan applications for many banks. However, the quality and reliability of these statements varies across countries and firms. MSMEs often lack the necessary technical knowledge for preparing the kind of sound financial statements needed for loan applications. Business development services may help them to build capacity in this area.[34] Regulatory reforms that encourage informal firms to formally register with the authorities may also lead to better information and documentation about businesses.[35]

Credit registries or bureaus provide records of firms' current and past loans. In an effort to provide more information about firms that have not previously had a loan, some credit bureaus also collect payment histories for utility bills or other services in addition to information from commercial banks and non-bank institutions. Credit registry and bureau records can help lenders observe whether loans have been repaid successfully in the past, and whether firms have existing liabilities that may make them risky borrowers.

Cross-country research shows that the presence of credit bureaus is associated with lower financing constraints and a higher share of bank financing for MSMEs.[36] Credit information can be used to generate credit scores predicting repayment on the basis of borrower characteristics. Regarding the women-owned MSME segment, since women often do not have formal financial transaction histories, they disproportionately have no records. As a result, there is frequently no information by which to rate them—which further exacerbates their inability to obtain formal financing.

Data from the World Bank Enterprise Surveys shows that about 79 percent of loans or lines of credit require collateral. This number is similarly high in most regions of the world. Movable assets such as machinery, equipment or receivables — as opposed to fixed assets, such as land or buildings — often account for most of firms' capital stock, particularly for MSMEs.[37] Banks are often reluctant to accept movable assets as collateral due to non-existent or outdated secured transactions laws and collateral registries. Many

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33. For more information, see the recent papers by: Helms and Reille 2004; Porteous, Collins, and Abrams (2010); Laeven (2003); and Munzele and Henriquez Gallegos (2014).

34. Bruhn, Karlan, and Schoar (forthcoming) finds that management consulting services improve firms' accounting and record keeping. However, the authors do not examine whether management services lead to better access to finance.

35. For example, simplifying business registration procedures can encourage firms to register (Bruhn 2013; and Campos, Goldstein, and McKenzie 2015).

36. See Love and Mylenko 2003 and Martinez Peria and Singh 2014. The 2013 Global Financial Development Report (World Bank 2012) and IFC's Credit Reporting Knowledge Guide (IFC 2012c) provide information on credit reporting institutions, as well as actions that governments can take to foster these institutions.

37. In developing economies, 78 percent of the capital stock of businesses is typically in movable assets, and only 22 percent is in immovable property (Alvarez de la Campa 2011).

legal systems place unnecessary restrictions on creating collateral, leaving lenders unsure whether a loan agreement will be enforced by the courts.[38]

Reforming movable collateral frameworks may enable firms to leverage their assets to obtain credit. Some developing countries have successfully reformed these systems, including Afghanistan, Albania, Bosnia and Herzegovina, China, Colombia, Ghana, Mexico, Romania and Vietnam, among others.[39] Overall, sound collateral laws and registries can enable firms to use their own assets to guarantee loans. In addition, such laws and registries may also reduce the need for publicly-sponsored guarantee schemes.

Insolvency regimes can help to close the MSME finance gap by supporting predictability and efficiency in credit markets. An effective insolvency framework protects creditor rights, and specifies a mandatory and orderly mechanism for the reallocation of assets of insolvent firms among stakeholders.[40] Many countries have significant legal gaps such that insolvency frameworks are unable to deal with MSMEs effectively. For MSMEs that do not possess a distinct legal identity from their shareholders, it may be necessary to create an entirely new legal framework for personal insolvency.[41]

Factoring is a financial transaction in which a firm sells its accounts receivable to a third party, called the factor, at a discount (equal to interest plus service fees) and receives immediate cash. Since a more creditworthy actor (the large buyer) is the liable party, the factor can issue credit at better terms than it would grant if the riskier MSME were the direct borrower. Factoring may be particularly useful in countries with weak judicial systems because factoring involves the outright purchase of accounts receivable by the factor, rather than collateralization of debt. However, factoring requires an appropriate legal framework.[42]

Another financial product that can help close the MSME finance gap is leasing (Berger and Udell 2006).[43] Leasing focuses on the firm's ability to generate cash flow from business operations to service leasing payments, rather than on its credit history or ability to pledge collateral. Leasing can generate business and financing opportunities for both lessors and lessees.[44] Leasing can allow firms to: (i) overcome technological challenges through access to specialized equipment; (ii) access equipment or facilities when ownership is not feasible; (iii) utilize assets in a flexible manner; (iv) manage cash-flow; and (v) benefit from a lessors' exploitation of economies of scale in purchasing and servicing.

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38. For example, about 90 percent of movable property that could serve as collateral for a loan in the United States would likely be unacceptable to a lender in Nigeria (Fleisig, Safavian, and de la Peña 2006)

39. See Fleisig, Safavian, and de la Peña 2006. See also UNCITRAL 2010 for a guidebook on efficient and effective secured transactions laws; Fleisig and others 2006 on the benefits of a single registry; and Love, Martínez Pería, and Singh 2016 for a recent study covering movable collateral.

40. See Cirmizi, Klapper, and Uttamchandani 2012. Araujo, Ferreira, and Funchal 2012 examine the effects of a reform that increased creditor protections and improved the efficiency of the bankruptcy system.

41. The SME Finance Policy Guide provides specific recommendations for the elements that such a framework should include (IFC 2011b).

42. The UNCITRAL Legislative Guide on Secured Transactions (2010) includes detailed recommendations regarding the establishment of a legal framework that is amenable to factoring transactions.

43. Brown, Chavis, and Klapper (2010) show that close to 34 percent of firms in high-income countries use leasing to finance new investment, as compared to only 6 percent in low-income countries.

44. Fletcher and others (2005) provide a manual on leasing legislation, regulation, and supervision based on international best practices and IFC's technical assistance experience (see also IFC 2011a).

Technology is the key differentiator in the access to finance space. Governments can create innovative initiatives supporting technological progress and knowledge exchange. A number of sandbox efforts have emerged to enable and promote the interaction between financial institutions and technology firms. Such regulatory sandboxes usually entail "the temporary relaxations or adjustments of regulatory requirements to provide a "safe space" for startups or established companies to test new technology-based financial services in a live environment for a limited time, without having to undergo a full authorization and licensing process."[45] For example, the Monetary Authority of Singapore has created a "Regulatory Sandbox" for Fintech Experiments, which will enable financial institutions as well as non-financial players to experiment with financial technology solutions. It is expected to encourage experimentation with innovative fintech solutions, while the overall safety and soundness of the financial system is maintained (Monetary Authority of Singapore 2017). Another example of the regulatory sandboxes has been implemented in the U.K., where companies willing to test their innovative products and services in the sandbox should apply to and be approved by the U.K. Financial Conduct Authority (FCA). Participants of such sandbox are granted an access to knowledge, business assistance and potential waivers to certain regulations. They can test their products and services with the real customers, if qualify and approved by FCA (Faden 2016).

The Role of the Private Sector

Previous studies have enumerated the significant Return on Equity (RoE) that banks can make by having dedicated SME functions and a structured approach to servicing the SME segment. For example, a survey by more than 10 emerging market banks showed that a best-in-class SME bank could aim for over 23 percent RoE performance, with a 15-18 percent differential in RoE compared to standard peers that did not have a structured approach in place (IFC 2012b). Moreover, IFC's global SME banking global benchmarks have estimated that a best-in-class Return on Assets (RoA) for the SME portfolio is around 5 percent, compared to the total bank's RoA of 4 percent. This includes compounded average annual growth rates on SME assets and liabilities of approximately 25-30 percent for a best-in-class bank, compared to 20 percent for the total bank's assets. The microfinance industry has proven to be profitable as well. For example, MIX has estimated an average RoE of microfinance banks at 21 percent, and an even higher return of 23.3 percent for rural microfinance banks in 2015. Their return on asset figures were 3.4 and 3.6 percent, respectively (MIX 2015).

Despite these positive findings, financial institutions in developing markets, including banks and MFIs, often find it hard to enter and operate in the MSME market. Some FIs use either a corporate banking or consumer banking model, that without adaptation and customization, has proven not to work well in targeting MSMEs. Typical challenges include: having high levels of informal businesses; a lack of reliable data; and lack of collateral coverage to hedge the perceived high risks. In addition, FIs in developing markets often have inappropriate processes, products and services, risk frameworks, and sales and servicing models to serve the segment profitably.

As identified by the present research, the unmet demand — that is, the finance gap —in developing countries presents a significant business opportunity for financial institutions. However, since this segment is drastically different from both retail and corporate banking, FIs need to utilize the appropriate models and approaches to effectively tap into the revenue opportunity, while at the same time mitigating the potential risks.

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45. Regulatory Sandboxes Provide "Safe Spaces" for Fintech Payment Services Innovation, Faden Mike, https://www.americanexpress.com/us/content/foreign-exchange/articles/regulatory-sandboxes-for-innovative-payment-solutions/

In order to stay profitable and competitive in the MSME market, financial institutions (FIs) should undertake a number of initiatives, including: (i) designing a business model; (ii) segmenting the customers; (iii) tailoring the products and services toward customer needs; (iv) developing credit assessment techniques and risk management capabilities; (v) establishing effective sales and delivery channels; and (vi) ensuring strong technology infrastructure.

FIs that adhere to best practice standards tend to diversify their income sources among both lending and non-lending products. One of the strategies is to diversify the product offering and deepen the relationship by offering product bundles. Banks such as ICICI bank in India and Santander Bank in Brazil have proven to be successful in utilizing this strategy (IFC 2012b).

Other institutions have placed a lot of emphasis on developing non-financial services (NFS) to increase customer loyalty, improve client retention rates, differentiate product offerings to the MSME market, increase the growth of their portfolios, and/or improve their customer service levels (IFC 2012d). Two of the leading banks in this area, including Türk Ekonomi Bankasi (TEB) Bank in Turkey and Standard Chartered Bank (in developing markets), have recognized the importance of NFS as an additional revenue enhancer.

Another bank in Lebanon – BLC, with support of IFC, developed the "We Initiative" (www.we-initiatve. com) as a cross-bank platform for supporting women with financial services in Lebanon. The program includes learning and development programs for women and unique financial products based on the specific environment for women in Lebanon. Services include collateral-free loans and mother's fiduciary accounts for their children. The program has yielded impressive results. For example, from 2012-2015, loans to women grew by 8.0 percent as compared to 7.0 percent for the bank as a whole. Deposits grew by 8.8 percent for women as compared to 4.0 percent for the total bank. Finally, gross income grew by 8.4 percent for women as compared to 4.5 percent for the bank as a whole. Women's non-performing loans (NPLs) stood at 2.5 percent in 2015 as compared to 5.7 percent for the bank as a whole. Moreover, women's SME NPLs were 5.5 percent as compared to the total bank SME NPL rate at 7.4 percent (IFC 2016).

Technology and digital financial services are also playing an increasingly larger role in the provision of finance and payment services to the MSME market segment. There has been a proliferation of companies operating in this space, which can be grouped into the following categories: (i) marketplace lending; (ii) supply chain financing (SCF); (iii) non-cash merchant payments; and (iv) alternate data, advanced analytics, and underwriting process automation. Given that all these companies either provide direct financing or enable financing by other financial institutions, they are often referred to as fintechs or technology platforms. Marketplace lending provides credit to individuals or MSMEs through online platforms that match lenders and investors with borrowers. In some instances, the platforms provide direct lending to the ultimate beneficiaries and take balance sheet risks, whereas in other cases they simply connect businesses that need financing with investors who have a higher risk appetite. These types of platforms provide individuals or MSMEs with an alternative way to access credit, and provide investors a way to lend directly (World Bank 2017).

The innovation of these platforms is mainly that financing takes places on an unsecured basis. Credit modeling and assessment is done using innovative credit-scoring models, and the underwriting process is very efficient — often outcompeting traditional banking loans in terms of both speed and time (World Economic Forum 2015). An example of these marketplace lending platforms in emerging markets includes Cumplo in Chile, which offers receivable financing and direct financing to SMEs. Another example, LendingKart Group in India, is a direct financier providing working capital loans to small businesses using big data and proprietary scoring models to assess creditworthiness.

Supply chain finance technology platforms can facilitate access to finance to both suppliers that sell products to corporates, and to the distributors that purchase goods from the corporates. Most of the suppliers and distributors are also MSMEs. According to Saleem, Hommes, and Sorokina (2017), a bank considering launching or scaling up its supply chain finance business would typically have the following two options to enable its SCF operations. It could use a bank-led platform, or it could contract a bank-independent platform. The latter might be done through developing an internal IT infrastructure or adopting another bank's platform. The former might be done by licensing the external technology solution, outsourcing the needed functionality as "Software as a Service" or participating in SCF marketplaces.

Banks can select platforms that best match their needs and fill the gaps in their own technology infrastructure. Examples of SCF-focused platforms include: Ariba, Demica, GT Nexus, Kyriba, Misys, Orbian, Premium Technology, Prime Revenue, and Taulia, among others. Each platform has different levels of maturity, complexity, product offering, and geographic coverage. Supply chain finance solutions can take various forms to address different challenges (Saleem, Hommes and Sorokina 2017).

Electronic payment solutions have also contributed to expanding access to credit for MSMEs because of the creation of the digital footprint created by their transaction history. Cash transactions conducted by merchants are not visible to financial service providers, but the situation changes dramatically once transactions become electronic. Indeed, this transaction history can be used to assess the creditworthiness of a particular business (World Bank 2017). Mobile point-of-sale (MPOS) technologies are now playing an important role in many markets. Square (US), Geo Pagos (Argentina), Kopo Kopo (Kenya) are examples of MPOS solutions, offering a variety of services, including payment processing, cash advances, targeted short message service (SMS) marketing solutions and business intelligence services.

Advanced analytics based on alternative data from mobile phone usage patterns, social media presence, merchant/purchase habits and historical transactional behavior can be used to make better and more efficient sales and credit decisions. With worldwide operations, Lenddo is an example of such a platform, offering credit scoring services through application and social data verification using non-traditional data. Tala, which launched its services in Kenya in 2014, uses a combination of demographic, geographic, financial, and social information from mobile phones, utility contracts, and other sources to create risk scores and credit recommendations in real-time. FarmDrive in Kenya, focused on small farmers, is also collecting and aggregating alternate datasets from multiple sources that are then used to build credit scores for the farmers. Partnerships between financial institutions and fintechs can create a synergy by combining the scale and resources of traditional financial institutions and the innovative knowledge and advanced algorithms of the fintech companies. Some examples of partnerships that are currently taking place include Tiaxa partnerships with Diamond Bank in Ghana, with Finca in Tanzania, and with IBA in Congo. M-Shwari, which launched operations in November 2012, established a strategic partnership between the Commercial Bank of Africa (CBA) and Safaricom. CBA in Tanzania is now offering products through M-Pawa, which provides an opportunity for consumers to save or borrow money through their mobile phones. This offering was introduced in May 2014, and attracted many customers who could only initially borrow a small amount (a couple of dollars). As they build their credit history, they can increase their credit borrowing limits.

Conclusion

T his report appraised empirical research regarding the existence and size of the micro, small and medium (MSME) enterprise finance gap in developing countries. A theoretical and empirical framework is presented to articulate and measure this gap at the country level, based on the interaction between supply and demand of finance for MSMEs. This research estimates that there are 65 million formal micro, small and medium enterprises that are credit constrained, representing 40 percent of all enterprises in the 128 reviewed countries. Of these developing economies surveyed, the potential demand for MSME finance is estimated at US$ 8.9 trillion, as compared to the current credit supply of $3.7 trillion. The finance gap attributed to formal MSMEs in developing countries is valued at $ 5.2 trillion, which is equivalent to 19 percent of the gross domestic product (GDP) of the 128 countries. This in turn amounts to 1.4 times the current level of MSME lending to these countries.

The finance gap in the informal MSME market is another important aspect of this study. In this context, there is an estimated $ 2.9 trillion in potential demand for finance from informal enterprises in developing countries. This figure is indeed sizeable, and is equivalent to 10 percent of the GDP in these countries.

In addition to contributing to the limited, but growing literature which tries to measure the size of the enterprise finance gap for emerging markets, this study introduces a new and a more systemic methodology to measure the gap. This revised methodology examines the gap from both a demand and supply constraint perspective. Many MSMEs may have a higher "potential" demand for financing. However, this demand often goes unacknowledged because the owner of the enterprise knows that is not likely to be met. Similarly, the supply of credit in these markets is a constraint. Financial institutions prefer to lend money to enterprises with better documentation, and an established track record. In other words, financial institutions prefer to supply credit to low-risk enterprises.

The results of this report also raise some pertinent questions: Has the enterprise finance gap increased in recent years? Can there be a dynamic measure of this gap which can be regularly updated so that interventions toward reducing the gap can be measured? Throughout this study, the authors have tried to pre-empt and address these concerns. First, the findings indicate that the increase in the estimate of the finance gap from the 2011 measure is primarily driven by changes in the methodology. This should be interpreted as a holistic recalculation of the gap from both the supply and demand perspectives. Second, this robust methodology has the added benefit of being easier to update in future years. Thus, for the first time, the evolution of the gap can be captured, and the dynamic changes to the gap over time can be more accurately assessed.

This study highlighted the key market-enabling policies that governments might pursue to close the MSME finance gap. The public sector has an important role in reforming the institutional environment, providing regulatory frameworks, and fostering competition and other market-oriented policy actions. Policy recommendations to support a more diverse financial landscape encompass improving competition within the financial system, as well as allowing a variety of financial institutions to operate. In addition, both

directed lending programs and risk-sharing arrangements can have positive effects on MSME access to finance and growth. However, it can be a challenge to effectively design and manage them. Lastly, mounting evidence suggests that solid credit information systems, movable collateral frameworks and registries, and efficient insolvency regimes can increase lending to MSMEs. Governments are encouraged to continue developing and improving the financial infrastructure to enable greater MSME lending.

The private sector benefits from market-enabling policies set by the public sector, and is able to directly intervene and promote financial inclusion. Private sector initiatives focusing on building the capacity of traditional financial institutions — such as banks, non-bank FIs, credit unions, savings and loan associations among others — can help them to better serve the MSME segment. The implementation of a targeted MSME strategy, coupled with capacity building of staff and management, are crucial for successful penetration to these underserved markets. A targeted MSME strategy could include the design of directed business models, sales and customer management policies, specialized credit risk models, and tailored products and services.

In addition to the traditional financial institutions, technology and digital financial services providers can play a significant role in providing finance and payment services to the MSME market segment. A variety of fintech players, such as marketplace lenders, payment and supply chain finance platforms, among others, can significantly contribute to closing the finance gap either by operating on their own or by partnering with the larger, traditional financial institutions.

There are a number of ways in which this study can be improved and expanded as part of a comprehensive research agenda to better understand the financing needs of MSMEs in developing and emerging economies. First, it is important to update the estimations at regular intervals. Most initiatives to reduce the finance gap would require assessment using an accurate country-level measure that is not only comparable with other countries, but also consistent across time. Second, there is value in disaggregating the MSME finance gap estimates by industries and sectors. For instance, the financing need for MSMEs in the manufacturing sector may be different from those of the services sector. The current methodology is flexible enough to accomplish this goal, provided that more granular data is collected at the sectoral level. Third, the proposed methodology can be adapted for better usability and interpretation by changing the benchmarked country. For example, data permitting, the debt-to-sales ratio for a regional comparator can be utilized as the appropriate benchmark. Fourth, the precision of the proposed methodology can be improved by extending the benchmarking to a more robust matching algorithm that goes beyond summarizing the results in the three categories, namely industry, size and age.

An area of further research could include the proposed regression framework to estimate the supply of MSME finance. When a sufficiently long panel of these country-level variables emerges, the framework may be used to understand how these individual regulatory environments distinctly shape the MSME financing sphere. Finally, more research is needed on topics related to the role of private- and public-sector interventions, specifically how reforms in these areas may affect the MSME finance gap. Such research is necessary to inform policy makers and private sector participants about the costs and benefits of different interventions. It would also allow for the design of interventions which can better target the reduction of the MSME finance gap in the future.

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Annex: MSME Finance Gap 2017

Country	Region	Incomelevel	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Afghanistan	South Asia	Low income	75,864	31,962,467	4,690,624,693	24%
Albania	Europe & Central Asia	Upper middle income	78,107	1,678,947,542	1,077,970,254	9%
Angola	Sub-Saharan Africa	Upper middle income	27,603	2,707,014,766	34,178,102,486	33%
Antigua and Barbuda	Latin America & Caribbean	High income	3,030	97,837,209	287,585,857	22%
Argentina	Latin America & Caribbean	Upper middle income	589,781	13,240,770,257	85,883,903,135	15%
Armenia	Europe & Central Asia	Lower middle income	26,166	1,266,114,349	1,145,072,303	11%
Azerbaijan	Europe & Central Asia	Upper middle income	261,950	6,894,776,091	6,805,414,229	13%
Bahamas, The	Latin America & Caribbean	High income	6,258	2,282,670,600	60,474,014	1%
Bangladesh	South Asia	Lower middle income	2,761,932	18,937,042,371	38,972,713,376	20%
Barbados	Latin America & Caribbean	High income	15,164	245,721,426	852,791,724	19%
Belarus	Europe & Central Asia	Upper middle income	80,209	4,492,537,962	18,424,867,354	34%
Belize	Latin America & Caribbean	Upper middle income	7,058	137,114,912	462,955,462	26%
Benin	Sub-Saharan Africa	Low income	9,150	113,662,320	689,205,366	8%
Bhutan	South Asia	Lower middle income	24,464	192,401,293	91,389,034	5%
Bolivia	Latin America & Caribbean	Lower middle income	225,451	2,224,300,904	1,703,075,687	5%
Bosnia and Herzegovina	Europe & Central Asia	Upper middle income	161,295	5,332,374,105	774,689,474	5%
Botswana	Sub-Saharan Africa	Upper middle income	13,137	1,425,602,197	2,669,630,855	19%
Brazil	Latin America & Caribbean	Upper middle income	15,738,452	57,048,523,506	626,023,562,478	35%

Country	Region	Incomelevel	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Bulgaria	Europe & Central Asia	Upper middle income	371,299	7,495,751,836	6,478,198,896	13%
Burkina Faso	Sub-Saharan Africa	Low income	41,718	382,454,699	1,609,940,885	15%
Burundi	Sub-Saharan Africa	Low income	3,799	227,941,840	490,969,888	16%
Cambodia	East Asia & Pacific	Lower middle income	376,069	571,765,294	3,709,338,045	21%
Cameroon	Sub-Saharan Africa	Lower middle income	93,030	1,661,946,877	8,714,894,256	30%
Cape Verde	Sub-Saharan Africa	Lower middle income	9,719	232,061,311	290,118,728	18%
Central African Republic	Sub-Saharan Africa	Low income	22,326	30,623,390	242,920,736	16%
Chad	Sub-Saharan Africa	Low income	5,170	282,238,635	1,134,072,276	10%
Chile	Latin America & Caribbean	High income	834,085	21,856,804,104	8,433,423,295	4%
China	East Asia & Pacific	Upper middle income	56,061,600	2,483,952,766,729	1,890,328,123,161	17%
Colombia	Latin America & Caribbean	Upper middle income	2,311,539	4,573,057,029	56,207,522,736	19%
Congo, Dem. Rep.	Sub-Saharan Africa	Low income	319,090	446,934,153	9,304,515,830	26%
Costa Rica	Latin America & Caribbean	Upper middle income	41,068	5,050,556,846	4,765,025,589	9%
Côte d'Ivoire	Sub-Saharan Africa	Lower middle income	203,491	1,426,843,718	2,355,285,515	7%
Croatia	Europe & Central Asia	High income	153,262	7,256,471,842	9,496,554,331	19%
Czech Republic	Europe & Central Asia	High income	939,049	29,935,445,460	71,491,146,931	39%
Djibouti	Middle East & North Africa	Lower middle income	2,805	65,413,570	146,558,734	9%
Dominica	Latin America & Caribbean	Upper middle income	2,433	57,579,279	69,096,974	13%
Dominican Republic	Latin America & Caribbean	Upper middle income	791,236	3,474,739,423	12,959,360,152	19%
Ecuador	Latin America & Caribbean	Upper middle income	700,999	4,049,685,700	17,937,808,957	18%
Egypt, Arab Rep.	Middle East & North Africa	Lower middle income	2,453,567	2,819,748,677	46,722,358,190	14%
Estonia	Europe & Central Asia	High income	65,907	2,253,754,880	5,273,410,808	23%
Ethiopia	Sub-Saharan Africa	Low income	136,633	1,687,733,587	4,290,163,843	7%

Country	Region	Income level	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Fiji	East Asia & Pacific	Upper middle income	10,011	251,675,667	1,084,830,273	25%
Gambia, The	Sub-Saharan Africa	Low income	9,558	50,651,573	97,953,281	12%
Georgia	Europe & Central Asia	Upper middle income	106,858	1,169,986,126	2,486,794,402	18%
Ghana	Sub-Saharan Africa	Lower middle income	26,190	2,738,047,528	4,992,806,125	13%
Grenada	Latin America & Caribbean	Upper middle income	1,951	89,347,054	175,912,721	18%
Guatemala	Latin America & Caribbean	Lower middle income	184,468	670,610,775	15,850,041,239	25%
Guinea	Sub-Saharan Africa	Low income	12,684	79,019,051	1,184,565,076	18%
Guinea-Bissau	Sub-Saharan Africa	Low income	10,402	33,211,702	130,050,139	12%
Guyana	Latin America & Caribbean	Upper middle income	22,765	619,118,537	117,394,765	4%
Honduras	Latin America & Caribbean	Lower middle income	127,330	1,136,203,890	2,986,194,753	15%
Hungary	Europe & Central Asia	High income	689,510	17,264,339,344	36,712,035,622	30%
India	South Asia	Lower middle income	1,563,999	139,455,882,221	230,062,869,817	11%
Indonesia	East Asia & Pacific	Lower middle income	2,480,152	56,612,630,954	165,852,545,872	19%
Iraq	Middle East & North Africa	Upper middle income	224,610	1,501,801,029	69,849,704,659	41%
Jamaica	Latin America & Caribbean	Upper middle income	10,438	432,143,613	2,717,638,556	19%
Jordan	Middle East & North Africa	Upper middle income	156,060	2,308,450,774	6,582,119,054	18%
Kazakhstan	Europe & Central Asia	Upper middle income	1,290,000	9,509,760,067	47,071,024,239	26%
Kenya	Sub-Saharan Africa	Lower middle income	1,560,500	3,854,957,054	19,326,332,625	30%
Kosovo	Europe & Central Asia	Lower middle income	103,697	1,653,642,974	342,253,144	5%
Kyrgyz Republic	Europe & Central Asia	Lower middle income	298,500	91,889,281	1,403,743,130	21%
Lao PDR	East Asia & Pacific	Lower middle income	126,695	439,038,255	2,608,571,859	21%
Latvia	Europe & Central Asia	High income	79,053	8,376,864,416	1,237,839,309	5%
Lebanon	Middle East & North Africa	Upper middle income	170,504	5,656,696,819	8,855,459,275	19%

Country	Region	Incomeleval	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Lesotho	Sub-Saharan Africa	Lower middle income	7,827	130,556,822	165,869,803	8%
Lithuania	Europe & Central Asia	High income	127,227	5,739,945,537	25,640,325,863	62%
Macedonia, FYR	Europe & Central Asia	Upper middle income	75,140	1,926,626,388	24,262,574	0%
Madagascar	Sub-Saharan Africa	Low income	210,918	305,447,031	2,678,170,824	27%
Malawi	Sub-Saharan Africa	Low income	21,098	9,422,754	477,042,915	7%
Malaysia	East Asia & Pacific	Upper middle income	645,136	69,935,901,865	21,454,214,934	7%
Mali	Sub-Saharan Africa	Low income	4,582	860,934,578	371,543,928	3%
Mauritania	Sub-Saharan Africa	Lower middle income	2,305	611,111,327	(275,459,789)	-5%
Mauritius	Sub-Saharan Africa	Upper middle income	40,112	2,435,207,831	428,581,666	4%
Mexico	Latin America & Caribbean	Upper middle income	4,048,543	27,045,681,152	163,917,536,619	14%
Micronesia, Fed. Sts.	East Asia & Pacific	Lower middle income	1,139	33,000,000	77,922,441	24%
Moldova	Europe & Central Asia	Lower middle income	49,444	671,503,966	894,338,409	14%
Mongolia	East Asia & Pacific	Lower middle income	72,473	698,933,740	1,293,202,307	11%
Montenegro	Europe & Central Asia	Upper middle income	19,869	530,128,322	631,854,361	16%
Morocco	Middle East & North Africa	Lower middle income	1,410,000	7,305,641,193	36,673,779,968	37%
Mozambique	Sub-Saharan Africa	Low income	28,474	205,296,601	1,345,068,141	9%
Myanmar	East Asia & Pacific	Lower middle income	128,094	2,740,317,090	13,838,600,855	21%
Namibia	Sub-Saharan Africa	Upper middle income	71,262	139,597,172	1,788,611,879	15%
Nepal	South Asia	Low income	99,411	730,830,641	3,601,276,163	17%
Nicaragua	Latin America & Caribbean	Lower middle income	173,742	242,772,450	3,111,643,152	25%
Niger	Sub-Saharan Africa	Low income	8,084	329,239,323	3,123,437,438	44%
Nigeria	Sub-Saharan Africa	Lower middle income	36,994,578	101,349,729	158,131,971,746	33%
Pakistan	South Asia	Lower middle income	2,958,129	2,843,781,068	42,169,608,424	16%
Panama	Latin America & Caribbean	Upper middle income	34,883	6,053,916,662	21,269,386,679	41%

Country	Region	Incomelevel	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Paraguay	Latin America & Caribbean	Upper middle income	14,616	2,507,273,201	3,970,951,794	14%
Peru	Latin America & Caribbean	Upper middle income	1,197,963	22,501,282,121	10,179,430,798	5%
Philippines	East Asia & Pacific	Lower middle income	816,759	15,248,794,855	221,793,419,218	76%
Poland	Europe & Central Asia	High income	1,520,404	55,072,943,816	107,851,883,087	23%
Romania	Europe & Central Asia	Upper middle income	407,410	18,232,839,393	45,871,481,609	26%
Russian Federation	Europe & Central Asia	Upper middle income	1,669,439	134,058,734,022	222,020,514,626	17%
Rwanda	Sub-Saharan Africa	Low income	123,390	217,157,882	1,273,776,437	16%
Samoa	East Asia & Pacific	Lower middle income	1,945	136,455,641	35,668,064	5%
Senegal	Sub-Saharan Africa	Low income	22,270	493,738,437	915,447,621	7%
Serbia	Europe & Central Asia	Upper middle income	84,082	5,136,836,096	10,089,573,405	28%
Slovak Republic	Europe & Central Asia	High income	446,409	8,822,770,352	18,264,992,545	21%
Slovenia	Europe & Central Asia	High income	137,460	7,225,596,416	7,980,425,474	19%
Solomon Islands	East Asia & Pacific	Lower middle income	3,050	43,213,645	173,839,087	15%
South Africa	Sub-Saharan Africa	Upper middle income	667,432	41,462,741,608	30,342,558,100	10%
South Sudan	Sub-Saharan Africa	Low income	7,313	139,925,153	291,354,886	3%
Sri Lanka	South Asia	Lower middle income	935,736	2,282,135,557	17,119,256,169	21%
St. Kitts and Nevis	Latin America & Caribbean	High income	2,738	136,508,645	96,395,974	10%
St. Lucia	Latin America & Caribbean	Upper middle income	4,870	154,355,714	191,512,736	13%
St. Vincent and the Grenadines	Latin America & Caribbean	Upper middle income	4,819	27,165,450	231,198,647	31%
Sudan	Sub-Saharan Africa	Lower middle income	13,088	1,087,084,350	21,690,686,257	26%
Suriname	Latin America & Caribbean	Upper middle income	1,598	256,808,343	969,522,749	20%
Swaziland	Sub-Saharan Africa	Lower middle income	162,853	119,893,187	1,822,841,863	45%
Tajikistan	Europe & Central Asia	Lower middle income	155,291	239,528,518	1,451,766,421	18%

Country	Region	Incomeleval	Number of MSMEs	Current Supply	MSME Finance gap	MSME Finance gap / GDP
Tanzania	Sub-Saharan Africa	Low income	3,162,885	1,327,618,892	5,787,227,422	13%
Thailand	East Asia & Pacific	Upper middle income	2,872,026	112,777,964,028	40,743,237,597	10%
Timor-Leste	East Asia & Pacific	Lower middle income	4,138	11,699,086	449,108,541	32%
Togo	Sub-Saharan Africa	Low income	14,892	232,454,157	389,955,574	10%
Tonga	East Asia & Pacific	Lower middle income	9,355	76,317,957	164,816,153	38%
Trinidad and Tobago	Latin America & Caribbean	High income	19,186	1,522,268,219	4,522,897,594	16%
Tunisia	Middle East & North Africa	Lower middle income	601,416	6,005,002,488	6,873,526,885	16%
Turkey	Europe & Central Asia	Upper middle income	2,587,319	152,283,092,698	80,249,986,670	11%
Uganda	Sub-Saharan Africa	Low income	25,133	531,364,911	4,869,014,554	18%
Ukraine	Europe & Central Asia	Lower middle income	364,237	6,806,902,953	33,052,156,041	36%
Uruguay	Latin America & Caribbean	High income	150,165	3,490,723,240	5,859,001,746	11%
Uzbekistan	Europe & Central Asia	Lower middle income	95,231	1,732,099,219	11,789,541,678	18%
Vanuatu	East Asia & Pacific	Lower middle income	1,578	97,341,953	135,124,860	17%
Venezuela, RB	Latin America & Caribbean	Upper middle income	251,033	4,204,524,489	157,314,192,661	42%
Vietnam	East Asia & Pacific	Lower middle income	447,091	11,204,738,662	23,609,833,957	12%
Yemen, Rep.	Middle East & North Africa	Lower middle income	400,235	698,632,009	18,969,214,616	53%
Zambia	Sub-Saharan Africa	Lower middle income	21,416	1,552,991,438	3,687,604,402	17%