Inclusion Pays: The Returns on Investing in Women in Agriculture

root capital

“Root Capital’s Women in Agriculture Initiative (WAI) has pioneered new ways of investing in rural women via gender-inclusive and women-led agricultural enterprises. Our experience, and now our data, over the last 10 years contradicts the widespread misconceptions that result in women receiving a meager 7% of global agricultural investment. Investors should look to women in agriculture not only because they are key to fighting global poverty, food insecurity, and climate change; they also generate a higher return on investment.”

Willy Foote, Founder and CEO, Root Capital

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EXECUTIVE SUMMARY

Inclusion pays when it comes to investing in women in agriculture. Evidence is mounting on the benefit—to women, to society, and to investors—of investments in gender-inclusive enterprises. But there has been little data connecting gender inclusion and business performance among enterprises in emerging economies; there has been even less data about the agricultural industry—a sector that 2.5 billion people globally depend on for their livelihoods, and one in which women receive only a fraction of total investment.

Over the last 10 years, Root Capital has invested in women in agriculture by lending to small and medium agricultural enterprises (SMEs) that are founded, owned, or led by women, or that have higher women's participation as managers, employees, and producers. Using data from Root Capital's 2012-2020 portfolio, which represents over $1 billion of investments in 552 enterprises, we set out to investigate the relationship between women's leadership and participation in agricultural enterprises and business and loan performance.

We found a clear and compelling business case for investing in women in agriculture. The results presented in this report show that investing in agricultural SMEs that are led by or inclusive of women is not only good for women and society, it's good for SMEs and good for investors. In particular, we found that, on average, enterprises with higher levels of women's leadership and/or participation:

- have more stable revenues;
- grow very quickly;
- are more likely to acquire new sources of financing;
- have lower default rates; and
- yield dramatically higher profits on their loans.

Based on these results, this report begins to build the business case for investing in women in agricultural SMEs. We hope that these findings not only demonstrate the financial benefits of investing in more gender-inclusive agri-SMEs, but that they also catalyze greater investment in these enterprises so that together we—investors, donors, technical assistance providers, and others—can close the gender finance gap in agriculture.

INTRODUCTION

Women SME leaders face numerous hurdles to accessing capital, from a lack of networks and visibility, to challenging social and cultural norms, to legal and structural barriers.[1] Compared to their male counterparts, women entrepreneurs also face unfavorable banking practices, including higher interest rates and shorter loan repayment periods.

Across emerging markets, the total gender finance gap for small and medium-sized enterprises (SMEs) is estimated to be $1.5 trillion. Although women-owned SMEs comprise about 28% of formal businesses in emerging markets, they account for 33% of the global SME finance gap,[2] with 65% either financially unserved or underserved.[3]

However, the social and economic case for investing in gender-inclusive SMEs is clear. Increasing women entrepreneurs' access to finance strengthens their decision-making power at work and at home, improves their incomes, increases their investment in their families' health and education, and generates economic opportunity for both women and men. In addition, closing the gender finance gap would generate substantial economic returns. Improving women's access to finance could boost global economic output by up to $28 trillion by 2025, according to some projections.[4] It is estimated that closing the finance gap for women-owned SMEs in just Brazil, Russia, India, and China (BRIC) and Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea, and Vietnam (the Next-11) could lead to 12% higher income per capita in those countries by 2030.[5]

The business case for greater women's leadership and participation is also increasingly clear, but the evidence almost exclusively relies on data from large businesses, especially those in advanced economies. These data show that gender inclusion in business is associated with better business performance and greater profitability.[6] There remains little evidence on the financials returns to investing in gender-inclusive SMEs, especially in emerging markets. The lack of evidence permits a misunderstanding about the risk and return profile of investments in women-led and gender-inclusive SMEs in emerging markets—a misunderstanding that contributes to the immense gender finance gap.

Specifically, this report focuses on the business case for investing in women-led and gender-inclusive SMEs in the agricultural sector in emerging markets, where the evidence is particularly scarce.

This report aims to contribute to the small but growing body of evidence on the business case for investing in gender-inclusive enterprises.[7] It addresses the common myths and misconceptions about investing in these businesses and demonstrates that there is not only a social and broader economic case, but a strong business case for investors.

Specifically, this report focuses on the business case for investing in women-led and gender-inclusive SMEs in the agricultural sector in emerging markets, where the evidence is particularly scarce.

While the gender finance gap specific to the agricultural sector has not been quantified, it is likely more pronounced than in other sectors. In general, women only receive 7% of total agricultural investment, although they make up, on average, 45% of the

1 https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/bf/focus-areas/bf-sme

2 https://financialallianceforwomen.org/download/msme-finance-gap/

3 https://www.ifc.org/wps/wcm/connect/aa871cd3-22a5-45a8-ad1b-1b63c88fceb6/AccessCreditMSME-Brochure-Final.pdf?MOD=AJPERES&CVID=k6A1OHB

4 https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/insights/perspectives-i1c6#:~:text=Research%20shows%20that%20SMEs%20run,2025%2C%20according%20to%20some%20estimates.

5 https://digitalforwomen.worldbank.org/access-finance

6 https://www.mckinsey.com/featured-insights/diversity-and-inclusion/diversity-wins-how-inclusion-matters

7 https://calvertimpactcapital.org/resources/just-good-investing

agricultural labor force in emerging markets.[8] Furthermore, although the agricultural finance sector has grown substantially, financial service providers remain unable to close the agricultural SME finance gap—for women- and men-led businesses alike—largely due to the high cost of servicing these enterprises in hard-to-reach, low population density rural areas and the relatively high risks of investing in the sector.[9] Women agri-entrepreneurs also face unique barriers to financing as well, including gender biases pervasive throughout the sector, less access to collateral, and less visibility and participation in industry networks.[10]

Across emerging markets, the total gender finance gap for small and medium-sized enterprises (SMEs) is estimated to be $1.5 trillion. Although women-owned SMEs comprise about 28% of formal businesses in emerging markets, they account for 33% of the global SME finance gap, with 65% either financially unserved or underserved.

About Root Capital

Root Capital invests in the growth of agricultural enterprises so they can transform rural communities. These enterprises purchase crops such as coffee, cocoa, or grains from smallholder farmers. With growth, they become engines of impact that can raise incomes, create jobs, empower women and young people, sustain peace, and preserve vulnerable ecosystems. Root Capital supplies these enterprises with vital resources: access to capital, trade and technical partners, training on financial management, and conservation practices. Root Capital works in hard-to-serve geographies where others don't. To date, we have distributed $1.5 billion to more than 740 enterprises and provided training to nearly 1,600 enterprises—collectively improving the lives of 10 million people in farming communities.

ROOT CAPITAL'S TWO PRINCIPAL SERVICES TO THESE ENTERPRISES ARE:

LENDING

Root Capital offers loans of up to $2 million for agricultural enterprises to purchase and process raw materials or to invest in new equipment, infrastructure, or inputs for farmers.

ADVISORY SERVICES

Root Capital's comprehensive advisory services, which include workshops and onsite support, help enterprises improve financial management, business operations, and agronomic practices, among other capacities.

8 https://pathways.isfadvisors.org/report/gender/

9 https://pathways.isfadvisors.org/

10 https://www.smefinanceforum.org/post/financing-to-support-women-in-the-agricultural-sector-0

ROOT CAPITAL'S JOURNEY AND APPROACH TO GENDER LENS INVESTING

The Women in Agriculture Initiative

Root Capital's commitment to promoting gender equity is critical to achieving its mission of improving rural livelihoods. We recognize the challenges faced by rural women and simultaneously recognize that rural women are critical to agricultural supply chains as well as their families' and communities' wellbeing. Recognizing the critical importance of all contributions that women make to agriculture globally, we celebrate and support rural women, whether on the farm or in the boardroom.

Root Capital launched the Women in Agriculture Initiative (WAI) in 2012 to identify and address the systemic inequities that rural women face. Since then, the WAI has grown to an organization-wide strategy that is core to our work, with four main pillars:

Through the WAI, Root Capital **finances** women-led and gender-inclusive enterprises, connecting women to markets and increasing their economic opportunities. We also provide **advisory services**, including training tailored to rural women's roles and preferences, to strengthen the capacity of women working in agricultural enterprises. We advise and finance agricultural enterprises' **design and implementation of new strategies and actions** to benefit women and their communities. Finally, we conduct **deep-dive research and field-building activities** to demonstrate the social and business case for investing in women in agriculture and to inspire further gender lens action by investors and small and growing agricultural enterprises alike.

GROW

Seek out and unlock the potential of businesses committed to inclusion of women.

CULTIVATE

Build women's financial and agricultural knowledge so they can thrive, personally and professionally.

INNOVATE

Encourage and support women-led design of new products and services that benefit the whole community.

AMPLIFY

Demonstrate a model for investing in women to help catalyze gender-smart changes in policy and practice.

Root Capital's Gender Lens Investing Journey

While Root Capital reached thousands of women even before taking on an explicit gender lens approach, results from a survey with our main investors led our organization to intentionally target outcomes for women by investing in enterprises led by and inclusive of women. Combined with Root Capital's own research on the impact that agricultural enterprises can have on leveling the playing field for women, our organization began its gender lens investing journey. The timeline below illustrates the trajectory of the WAI.

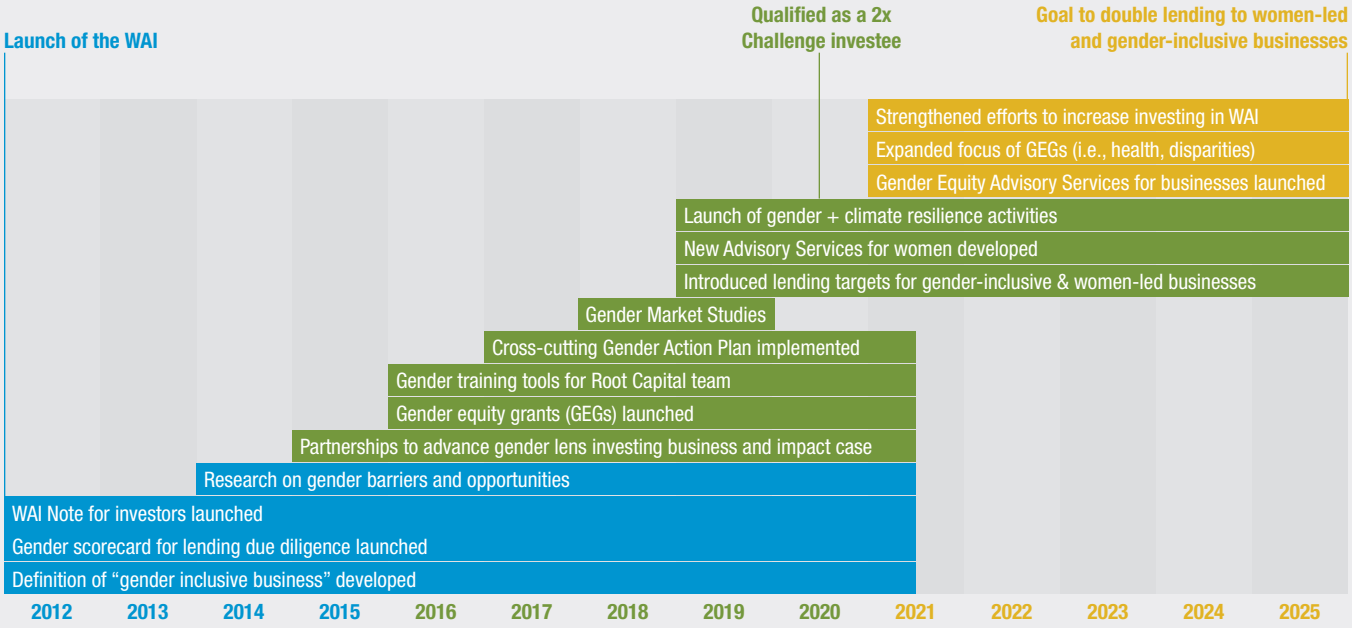
From 2012 to about 2015, Root Capital put in place the building blocks to achieving greater gender equity. One of the first steps was to create definitions to guide our gender inclusion goals. We defined "gender-inclusive enterprise" and "women-led" enterprise" based on specific criteria and in a way that enabled easy validation by the investment and advisory teams. *See box below for the definitions.*

To help the lending team easily capture the gender data needed to classify enterprises according to one of the above definitions, we launched a Gender Scorecard that incorporated gender-related metrics into our lending due diligence.[11] The data collected through the Scorecard has allowed Root Capital to track enterprises in their pipeline and portfolio.

Responding to investor commitment to investing in women, Root Capital also launched a specific WAI Note. Since 2012, the WAI Note has allocated investor capital toward gender-inclusive enterprises, helping to build connection and community among investors who strongly align with Root Capital's commitment to gender equity.

Finally, Root Capital undertook a number field-based studies to understand the gender-related barriers for women in agriculture, and measure the impacts of agricultural enterprises on reducing those barriers. These studies have built our knowledge and laid the groundwork for more gender equity programming. Results from these studies, for example, informed the design of the Gender Equity Grants program for clients to directly address some of these disparities.

Figure 1. Women in Agriculture Initiative Timeline



11 See Appendix 1 for the full Gender Scorecard.

Because enterprises sometimes need financial products beyond debt to achieve gender equity goals, we piloted Gender Equity Grants (GEGs) to help client agricultural enterprises implement gender inclusion actions. The GEG program provides grant funding to Root Capital lending clients to implement specific gender inclusion actions that fit their context and that respond to the preferences of women in the enterprise's supply chain. GEGs, for instance, can support productivity enhancement, new business ventures by women, training, or other activities. Once Root Capital approves a proposal, the enterprise receives a grant worth up to $20,000.

And because women have been much less likely than men to participate in critical advisory services, we created new advisory services curricula and approaches that target women. For example, we first created the Gender Inclusion Checklist[12] to ensure that our trainers are aware of the gender dynamics in the workshop setting and that they follow best practices to promote women's inclusion. The checklist includes provisions like providing free childcare for participants, adapting workshop timing and location to increase accessibility for women employees, and establishing rules against discriminatory jokes and language. Based on the results of an external assessment of gender inclusion in our advisory services, we also created new modules to better support the roles and training needs of women. In partnership with Value for Women, we developed and launched a new Gender Equity Advisory Service to help enterprises become more inclusive in their operations.

In addition to these post-investment efforts to strengthen gender equity, we recognized the need for a stronger gender lens pipeline development approach. With the portion of women-led and gender-inclusive enterprises in our portfolio stagnating at around 15% and 45%, respectively, between 2018 and 2020 we launched a series of gender lens market studies. These studies, across nine value chains in 15 countries, identified significant new investment opportunities in women-led and gender-inclusive enterprises. With a stronger and clearer pipeline of these enterprises, we also worked with our lending teams to set ambitious, data-driven goals for investments in them.

Finally, our gender lens investing journey has been strengthened by the critical partnerships of numerous peers, investors, donors, and experts, including the Wagner Foundation, Value for Women, G-SEARCH, and Gender Smart, among others. We have also leveraged these partnerships to generate a platform through which we share our learnings across the impact investing and international development sectors.

Over the last 10 years, these efforts have enabled the WAI to achieve measurable impact. To date, Root Capital has invested $545 million in over 260 gender-inclusive enterprises, including 130 women-led enterprises. These investments have reached over 550,000 women producers and more than 14,000 women employees. In the coming five years, our ambitious goal is to double our lending to both women-led and gender-inclusive agricultural enterprises.

12 See Appendix 2.

WAI by the Numbers since 2012

250+
Gender Inclusive Businesses Reached

$545M
Credit Distributed

554K
Women Farmers Reached

14K
Women Employees Reached

106
Women Entrepreneurs Reached

Root Capital Definitions

GENDER-INCLUSIVE ENTERPRISE

An enterprise in which:

- Over 30% of employees, artisans, and farmers are women; or
- over 20% of employees, artisans, and farmers are women AND the enterprise is led by a woman.

WOMEN-LED ENTERPRISE

An enterprise that meets one of the following criteria:

- One or more women hold the position of executive director, senior manager, director of operations, president, or the equivalent level of leadership;
- At least 51% or more of managers are women;
- At least 51% of the membership of the cooperative or the membership of the board of directors (or similar governance group) are women; or
- At least 51% or more of the enterprise is owned by women.

METHODOLOGY

To measure the relationship between women's participation and business and loan performance, we analyzed nine years of data from active and former borrowers representing over $1 billion in Root Capital investments. The data covers 552 borrowers and 1,226 loans and includes longitudinal data on several measures of women's participation and business and loan performance at both the client and loan levels. Borrowers in the study are all small and growing agricultural enterprises working in an array of industries and are located across Latin America, Africa, and Indonesia.

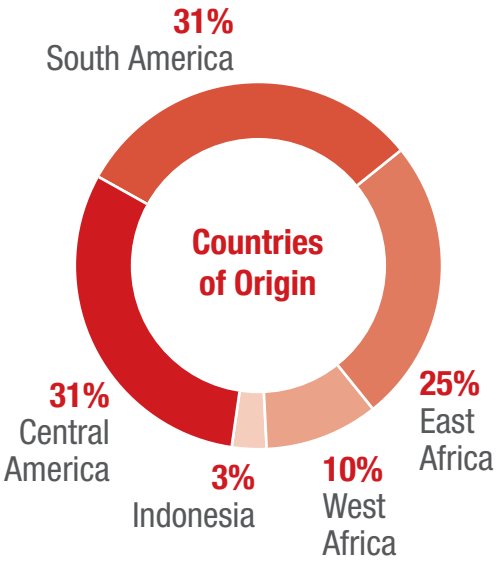
1226
Loans

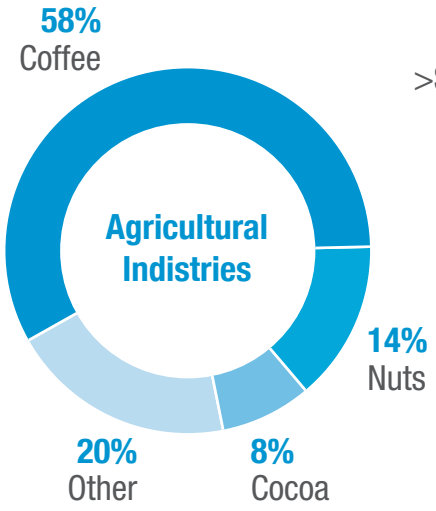
$17K–$4.5M
Loan size

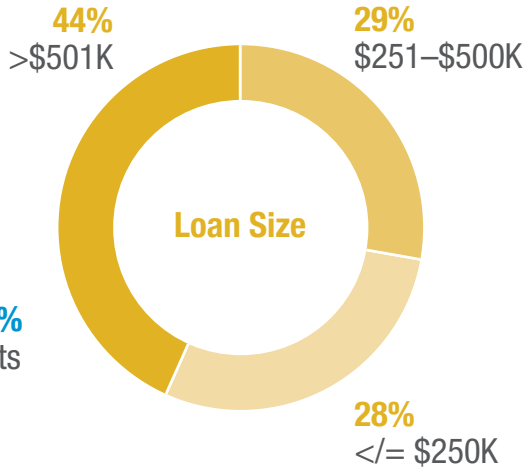
31
Countries of origin

552
Borrowers

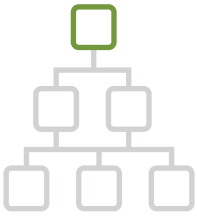
54
Agricultural industries



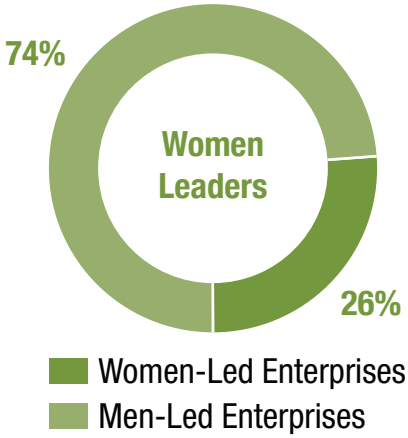


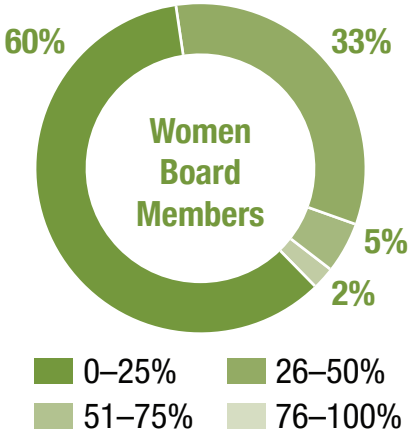


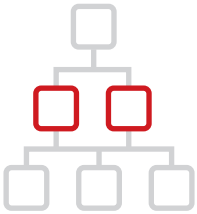
Recognizing the diverse array of women's roles in agriculture, our analysis looks at several measures of women's participation, including women's leadership, women board members, women managers, women non-management employees, women producers, and an overall measure of gender inclusion. The figures below show women's participation among the portfolio of enterprises included in this analysis.



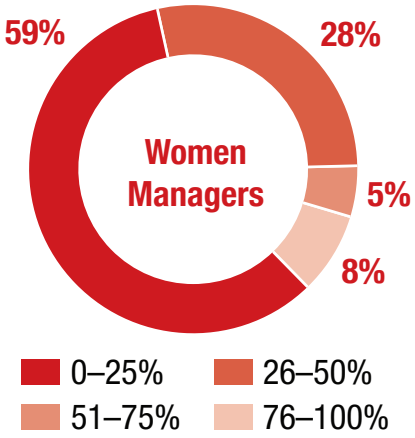
Leaders & Entrepreneurs

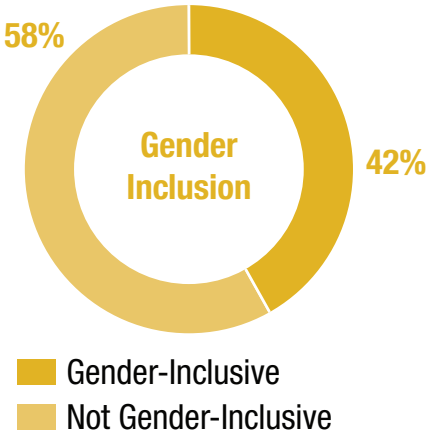


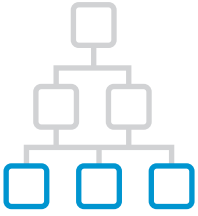




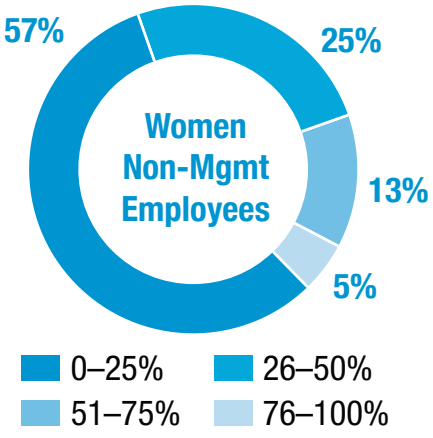
"Hidden Influencers" Middle Managers, Field Officers, Agronomists

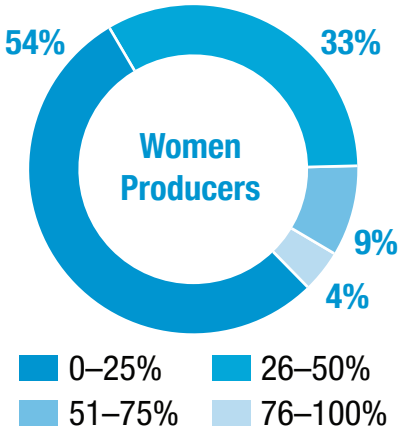






Farmers & Agroprocessing Employees





Specifically, we look at the (statistical) relationship between business and loan performance measures and **increases in women's participation,** including:

- Differences between enterprises led by men[13] vs. those led by women;[14]
- Differences between enterprises that are not gender-inclusive vs. those that are gender-inclusive *(see definition above)*;
- A 10 percentage point increase in:
  - women board members;
  - women managers;
  - women full-time, non-manager employees; and
  - women producers.

Our analysis revealed very little correlation between increases in both women board members and women producers with business and loan performance. Therefore, we excluded these analyses from the report.[15] Additional summary statistics for these independent variables can be found in the Technical Appendix.

We analyzed the relationship across Root Capital's portfolio of borrowers between these different measures of women's participation and two categories of performance indicators:

- **business performance –** measures of enterprise stability, growth, and further access to finance; and
- **loan performance –** measures of risk and loan profitability.

A Note on Methodology

Previous portfolio analyses of the relationship between women's participation and business or investment performance have grouped investees into quartiles based on the percentage of women's participation and compared the performance of the lowest quartile to that of the highest quartile.[16] We chose to focus instead on estimating the linear relationship between incremental increases in women's participation and business and loan performance using regression analyses. This approach allows us to incorporate several control variables and to examine the statistical significance of the results. In addition, this approach allows us to analyze more modest—and more likely, in the case of Root Capital's typical borrowers—increases in women's participation (for example, a 10 percentage point increase in women managers). It also allows for the estimation of the relationship between performance and any increases in women's participation. The results shown in this report examine the increase by 10 percentage points, but any increase can be examined by multiplying the finding by the desired increase in women's participation. For example, if a 10 percentage point increase in women managers is associated with a $2K higher contribution margin, a 50 percentage point increase in women managers would be associated with a $10K higher contribution margin.

13 Root Capital does not have a definition for "men-led" enterprises, nor does it capture data on men's participation. Therefore, in this paper "men-led" refers to any business that does not meet the definition of women-led.

14 See box above for definitions of women-led and gender-inclusive enterprises.

15 We are unsure why we found little correlation between women's participation on boards and business and loan performance, though it may be at least partially due to the higher number of missing values for this variable and consequently lower valid observations to find a statistically significant relationship. It is likely that the little correlation between women producers and business and loan performance is a result of the indirect role that producers—especially women—have in agri-enterprise operations, except among outliers with very high numbers of or exclusively women producers.

16 Such as "Just Good Investing" by Calvert Impact Capital and "The Bottom Line" by Catalyst.

BUSINESS PERFORMANCE INDICATORS

BUSINESS STABILITY

Dip in Revenues >25%
Whether a client ever experienced a revenue dip of more than 25% between two consecutive years during the analyzed time period.

Variation in Revenues
The standard deviation of the sales values of each client measuring the variation in actual dollar sales values.

REVENUE GROWTH

CAGR
Compound Annual Growth Rate of sales.

AAGR
Average Annual Growth Rate of sales.

ACCESS TO NEW SOURCES OF FINANCING

From Root Capital Only to New Sources of Capital
Whether the borrower accessed additional sources of social or commercial loans when it only had access to Root Capital loans at the time of its first Root Capital loan.

From Root Capital or Social Lenders to New Commercial Sources of Capital
Whether the borrower accessed commercial financing when it either only had access to social financing or access to financing from Root Capital at the time of its first Root Capital loan.

LOAN PERFORMANCE INDICATORS

DEFAULT RATE

Percentage of loans a borrower did not repay in full.

LOAN PROFITABILITY

Total loan revenue minus write-offs and the cost of debt (a standard % multiplied by a loan's average balance during a given year).

We analyzed 1226 loans to 552 borrowers across 54 agricultural industries in 31 countries.

We ran multiple linear regressions (Ordinary Least Squares) to determine the relationship between the aforementioned independent women's participation variables and dependent business and loan performance variables.[17] Regression analysis allows us to not only study the difference in averages and look at the direction and magnitude of those differences but also to examine the statistical significance of our results. Whenever we refer to statistical significance in this study, we are referring to the 10% significance level.

We included control variables in the regressions to account for other potentially influencing factors and to isolate the effect of the independent gender variables as much as possible.

We controlled for:

CONTROL	ANALYSES USED
Region	In all analyses.
Industry	In all analyses.
Size of the enterprise in yearly sales	In analyses of all business performance indicators. *(To account for different inherent characteristics of small versus large enterprises and the different stages of the enterprise life cycle.)*
Loan size using average size of loan a borrower receives from Root Capital	In analyses of all loan performance indicators. *(Given that several variables are influenced by loan size, such as write-off amounts.)*

17 Heteroscedasticity-consistent standard errors (HC1) are computed to produce more robust results by accounting for heteroscedasticity of the residuals.

RESULTS: BUILDING THE BUSINESS CASE FOR INVESTING IN WOMEN IN AGRICULTURE

Enterprises with greater women's leadership and participation have more stable revenues.

Business Performance

Across nearly all measures, enterprises with greater women's participation, on average, have more stable revenues than enterprises with less women's participation. We measure revenue stability using two indicators: 1) whether an enterprise experienced an annual revenue *dip* of greater than 25%; and 2) the amount of annual revenue *variation*. We found that:

A 10 percentage point increase in the average share of women managers is associated with a 2 percentage point lower probability of a year-on-year revenue dip of more than 25%.

That is, enterprises with more women managers were less likely to see dramatic revenue dips. By comparison, 35% of enterprises in the full sample experienced a dip greater than 25%. We used a threshold of 25% based on average year-on-year revenue dips for the enterprises in the sample. We conducted sensitivity checks using thresholds of greater than 20% and greater than 30% dips in revenue and found that the results remained stable.[18]

On average, women-led and gender-inclusive enterprises see one-third smaller annual variation in revenues compared to men-led and non-gender-inclusive enterprises.

A 10 percentage point increase in the average share of women managers is associated with a 2 percentage point lower probability of a year-on-year revenue dip of more than 25%.

Note that this variation includes both revenue increases and decreases. Therefore, this measure demonstrates the *magnitude* of revenue variation. Importantly, all of the investments analyzed in this report are loans—typically one-year working capital loans for trade finance—therefore large revenue variation is interpreted here as a risk. Importantly, these findings do not provide insights on the viability of equity investments in these enterprises as this analysis focuses specifically on enterprise behavior with *debt investments* and cannot be extrapolated to how an enterprise may behave or perform with an equity investment.

The trend of greater participation of women being associated with more stable revenues holds across nearly all of the measures of women's participation (see Figure 2). Together, the results on revenue stability demonstrate a key benefit to debt investors of investing in enterprises with greater women's participation. They are less likely to experience substantial

18 A 10 percentage point increase in women managers is associated with a 1.6% reduced likelihood of a year-on-year revenue dip of greater than 20% (statistically significant at the 10% level) and a 1.4% reduced likelihood of a year-on-year revenue dip of greater than 30% (just barely statistically insignificant at the 10% level).

revenue dips and variation, which could impact their ability to repay their loan, invest in their business, pay producers and employees, and/or be eligible for future loans.

Although women-led and gender-inclusive enterprises in the sample have lower overall revenues (see the Technical Appendix), on average, we control for enterprise revenue in the analysis, therefore the size of an enterprises' revenues do not influence these findings.

In the figures below, statistically significant (at the 10% level) findings are in blue, and not statistically significant findings are noted in grey.

Figure 2. Business Instability – Greater than 25% Dip in Annual Revenue

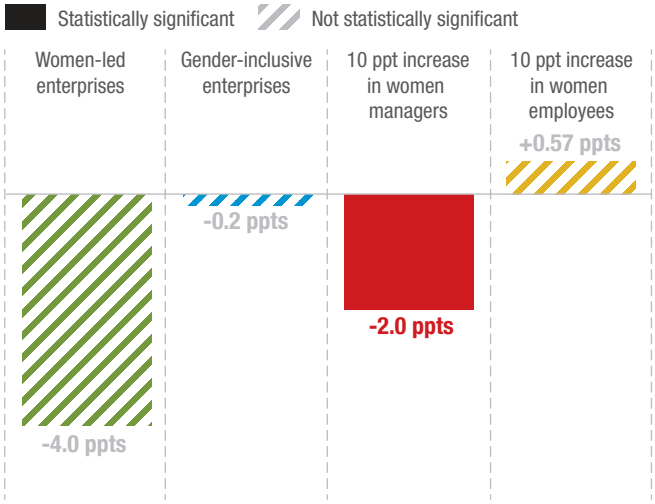
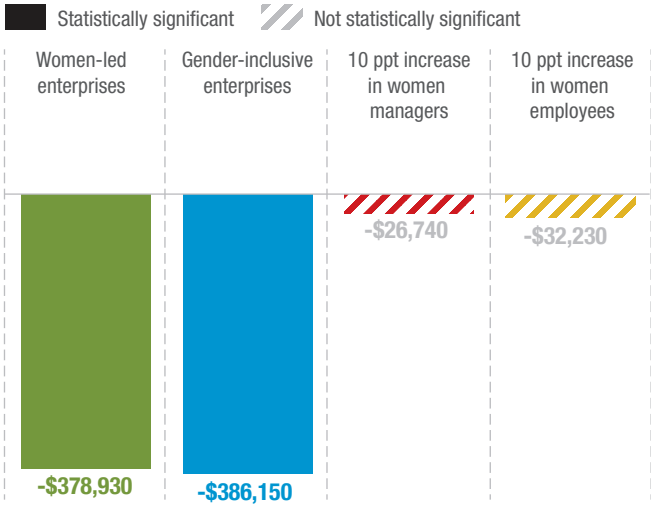


Figure 3. Business Instability – Variation in Revenues



INVESTOR TAKE-AWAY

For lenders in particular, greater participation of women can indicate less business instability—and therefore less risk—associated with debt investments.

Women-led and gender-inclusive enterprises are very fast-growing.

On average, women-led enterprises experience year-on-year growth rates of 25.7% (CAGR) and 45.2% (AAGR). Gender-inclusive businesses experience, on average, year-on-year growth rates of 20.6% (CAGR) and 35.1% (AAGR)

In addition to having more stable revenues, enterprises with greater participation and leadership of women also have very high annual growth rates. The analysis shows that:

On average, women-led enterprises experience year-on-year growth rates of 25.7% (CAGR) and 45.2% (AAGR). Gender-inclusive businesses experience, on average, year-on-year growth rates of 20.6% (CAGR) and 35.1% (AAGR).

The OECD uses a 20% year-on-year growth rate threshold to distinguish high-growth enterprises, among other characteristics. It illustrates the laudable growth of the women-led and gender-inclusive businesses in the sample.[19] Importantly, most Root Capital clients are high-growth enterprises, with the average CAGR across the full portfolio of clients in this study around 24% (CAGR) and 47% (AAGR). This is both a function of our prioritization of high-growth enterprises and most of our clients being in high-growth stages of their businesses.

Although average year-on-year growth rates for enterprises with more participation and leadership of women were on par with those of male-led businesses, when we control for enterprise size (in terms of annual revenues), we find slower growth rates on some measures of women's participation:

Gender-inclusive enterprises have, on average, a 28.30 percentage point lower AAGR compared to non-gender-inclusive enterprises.[20]

A 10 percentage point increase in the average share of women employees is associated with a lower CAGR and AAGR of 2.74 and 5.88 percentage points, respectively.

The relationship between lower revenue growth rates for enterprises with greater participation of women exists across all measures of women's participation, although many of the findings are not statistically significant.

A 10 percentage point increase in the average share of women employees is associated with a lower CAGR and AAGR of 2.74 and 5.88 percentage points, respectively.

19 https://www.oecd.org/sdd/39974588.pdf

20 The averages of outcome variables are only meant to convey an idea of the rough magnitude of an outcome variable to better compare and assess the magnitude of the coefficients.

Gender-inclusive enterprises have, on average, a 28.30 percentage point lower AAGR compared to non-gender-inclusive enterprises.

Figure 4. Revenue Growth – CAGR

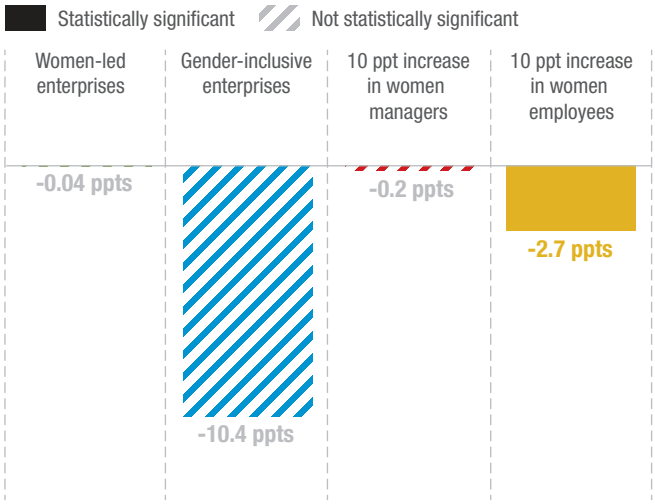
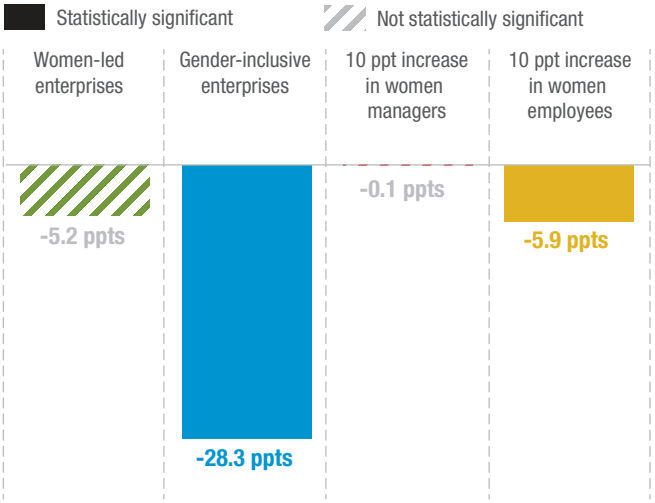


Figure 5. Revenue Growth – AAGR



INVESTOR TAKE-AWAY

Agricultural enterprises with strong participation and leadership of women grow very fast. For investors balancing growth *and* stability, gender-inclusive enterprises offer strong growth while avoiding some of the tradeoffs of extreme growth observed in less inclusive enterprises.

Financing enterprises with greater participation of women catalyzes their access to additional sources of financing.

Overall, enterprises with more women's participation are more likely to access additional sources of capital after their initial Root Capital loan. Central to our mission is investing in agricultural enterprises overlooked by other investors both to address the significant credit gap among agricultural SMEs *and* to prove that agricultural enterprise are good investments, catalyzing even more capital than Root Capital alone can provide. This catalytic effect appears to be most pronounced in enterprises with greater inclusion of women. In particular, we found that:

Compared to non-inclusive enterprises, gender-inclusive enterprises are associated with a 20.8 percentage point higher likelihood of obtaining new social or commercial financing after having financing only from Root Capital;

Gender-inclusive enterprises are associated with an 11.8 percentage point higher likelihood of obtaining access to commercial financing after having financing only from Root Capital or another social lender; and

On average, a 10 percentage point increase in the average share of female managers and employees is associated, respectively, with a 3.4 and 3 percentage point higher probability of accessing new commercial financing. The rest of the findings suggest a similar trend but are not statistically significant.

Across the portfolio we analyzed, at the time of their first loan from Root Capital, 34% of enterprises had no other social or commercial financing, and around 22% of enterprises only had only access to other social loans. Gender-inclusive enterprises, on average, were not substantially more likely to lack social or commercial financing at the time of their first loan from Root Capital. But when they did lack other funding, they had a 20% higher likelihood, on average, of obtaining it after receiving their first loan from Root Capital.

Although it is unclear why enterprises with higher participation and leadership by women were able to access new sources of financing at higher rates than enterprises with less participation and leadership by women, evidence from other research suggests this may be related to negative attitudes or assumptions about women entrepreneurs, such as cultural biases or higher perceived risk; prioritization of larger enterprises, meaning that some investors wait until gender-inclusive businesses have grown larger before being willing to finance them; and/or lack of outreach to women entrepreneurs.[21] This research would suggest that Root Capital plays a "first-mover" role, demonstrating the viability of investing in these businesses, providing these enterprises an investee track record to show future investors, and financing their growth to qualify for other loans. Given the large gender credit gap for agricultural enterprises, these findings demonstrate the powerful catalytic effect of removing barriers to initial financing for gender-diverse enterprises.

21 https://www.gpfi.org/sites/gpfi/files/documents/Strengthening.pdf

On average, a 10 percentage point increase in the average share of female managers and employees is associated, respectively, with a 3.4 and 3 percentage point higher probability of accessing new commercial financing.

Figure 6. Access to New Sources of Capital

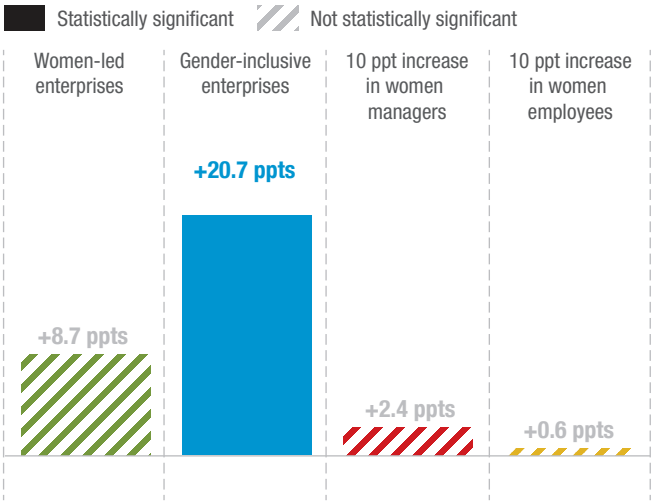
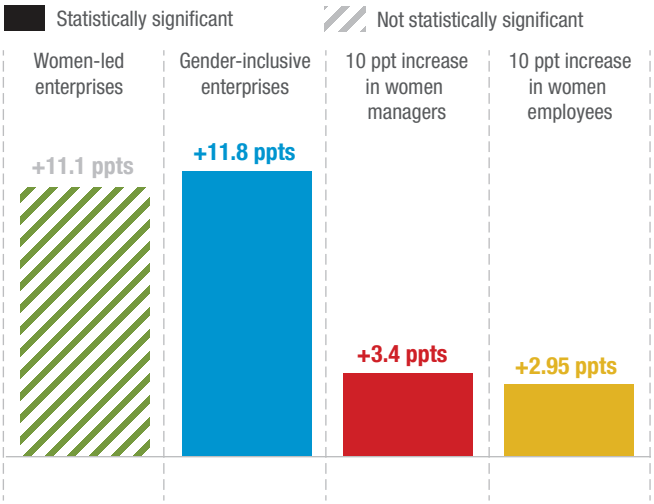


Figure 7. From Root Capital or Another Social Lender to Commercial Capital



INVESTOR TAKE-AWAY

Investments in gender-inclusive agricultural enterprises—especially those underserved by investors—can accelerate their access to new sources of capital.

Enterprises led by women and with more women employees have lower default rates.

Loan Performance

Enterprises that are led by women and have higher percentages of women employees, on average, have lower default rates than businesses not led by women or those with fewer women employees. We found that:

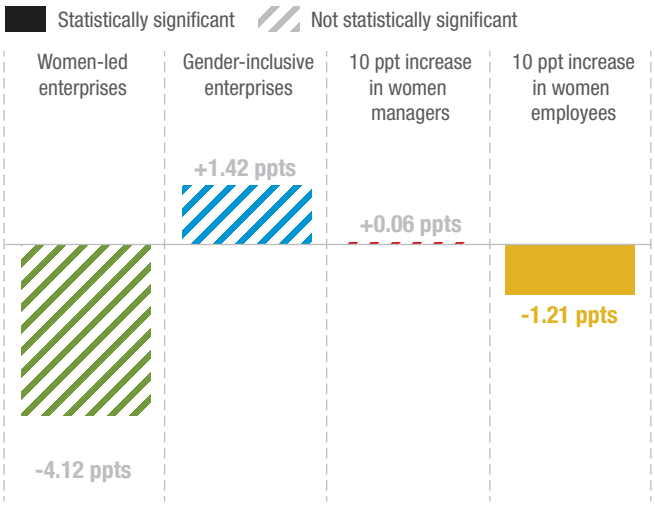
A 10 percentage point increase in the number of female employees is associated with 1.2 percentage point lower default rate.

Women-led enterprises have a 4.12 percentage point lower average default rate than non-women-led enterprises, although this finding is barely statistically insignificant,

This is substantial given that the average default rate across the whole client portfolio is around 13.5%. However, we found no statistically significant relationship between gender-inclusive enterprises or those with more women managers and average default rate.

Interestingly, through its pre-investment risk rating tool, Root Capital estimates a lower probably of default for women-led enterprises and those with a higher share of women employees. For the enterprises in the sample, we estimated a lower probability of default for the women-led enterprises (1.13 percentage points) and those with a higher share of women employees (0.47 percentage points) than for enterprises not led by women and those with a lower share of women employees. This means that although Root Capital's risk rating tool correctly estimates that these borrowers are less likely to default, it underestimates the magnitude of the reduced risk. This is important because an enterprise's risk rating affects the terms of its loan; updating the risk rating for borrowers with more women's representation based on their loan performance could lead to more favorable loan terms.

Figure 8. Default Rate



INVESTOR TAKE-AWAY

Loans to more inclusive businesses can carry less risk of default. Investors should analyze their risk rating tools against actual default rates to ensure anticipated investment risks—and associated terms—are data-driven.

Loans to women-led enterprises and those with greater participation of women are more profitable.

Across nearly all measures of women's participation, loans to enterprises with greater women's leadership and participation yielded dramatically higher profits to Root Capital than enterprises with less women's leadership and participation. We define loan profitability as the contribution margin of a loan; it is calculated as follows:

Loan Profitability	=	Total loan revenues	–	Cost of debt	–	Total write-offs
(Contribution margin)		Interest payments Closing fees Disbursement fees		Interest and fees Root Capital pays its investors		Amount Root Capital believes it will not recover from the loan

The loan profitability model does not include loan servicing costs, which are assumed to be consistent across all loans.

That analysis revealed that:

Controlling for the loan size, region, and industry, loans to women-led enterprises, on average, yield $17,850 more profits than loans to non-women-led enterprises.

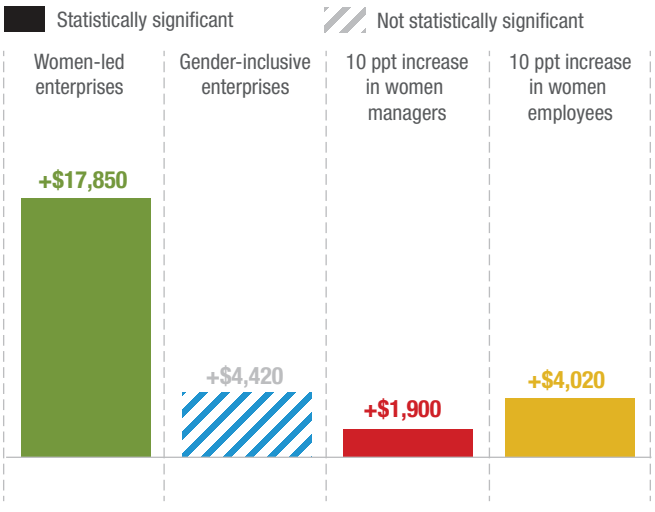
A 10 percentage point increase in the share of female managers and employees is associated with higher loan profits of $1,900 and $4,020, respectively.

These are very large increases given that the average profit per loan is around $6,000 across the whole portfolio.

To better understand the dramatically higher average loan profits, we dissected the loan's profits, or contribution margin, into its components: total revenues, cost of debt, and write-offs. We found that the higher loan profits associated with enterprises with higher levels of women's participation is almost entirely driven by lower average write-offs. That is, not only are enterprises with greater participation and leadership of women less likely to default, when they do default Root Capital writes off less of their loan, on average.

Controlling for the loan size, region, and industry, loans to women-led enterprises, on average, yield $17,850 more profits than loans to non-women-led enterprises.

Figure 9. Loan Contribution Margin



A 10 percentage point increase in the share of female managers and employees is associated with higher loan profits of $1,900 and $4,020, respectively.

Total revenues

Total revenues include interest payments, closing fees and disbursement fees paid by the borrower to Root Capital.[22] As shown in Table 1, we find that interest rates tend to be lower for enterprises with greater women's participation. The same holds for the disbursement fee rate, and we do not see any statistically significant differences in disbursement fees. In addition, closing fee rates tend to be higher for enterprises with greater women's participation and closing fee revenue is higher across all measures of women's participation. As a result, closing fee revenue constitutes only a small amount ($65-$50) of the higher profits from loans to enterprises with greater women's participation. However, none of the findings on differences in *total revenues* are statistically significant, likely because the differences in closing fee revenues are mostly offset by the difference in disbursement fee revenues.

Cost of debt

We see no statistically significant differences in the cost of debt, which is calculated by multiplying Root Capital's cost of debt with a loan's average balance during a given year.

Write-offs

The large difference in loan profitability is driven predominantly by the difference in the average amount Root Capital writes off a loan.[23] On average, we write off around $21,500 per loan. We found that we write off $16,310 less for women-led enterprises compared to men-led enterprises, and, on average, write off $4,730 less from enterprises with 10 percentage points more women employees. While not statistically significant, we also found that Root Capital writes off, on average, $5,430 and $1,220 less to gender-inclusive enterprises and those with 10 percentage points more women managers, respectively.

Table 1. Components of the Contribution Margin

	Women-led enterprises	Gender-inclusive enterprises	10% increase in women managers	10% increase in women employees	Average Across Full Sample
Realized Contribution Margin	**+$17,850**	+$4,420	**+$1,900**	**+$4,020**	~ $6,000
Total Revenues	+$1,380	-$1,370	+$940	-$850	~ $36,000
Interest Rate	**-0.60 ppt**	-0.09 ppt	-0.05 ppt	**-0.15 ppt**	~ 11 %
Total Realized Fees	+$551.94	+$38.21	+$5.42	+$105.98	~ $5500
Closing Fee Rate	+0.05 ppt	**+0.05 ppt**	+0.01 ppt	**+0.01 ppt**	~ 0.1 %
Closing Fee Revenue	**+$450.34**	**+$404.89**	+$65.10	**+$115.95**	~ $650
Disbursement Fee Rate	-0.07 ppt	-0.06 ppt	-0.01 ppt	**-0.01 ppt**	~ 0.9%
Disbursement Fee Revenue	+$101.60	-$366.68	-$59.68	-$9.97	~ $5,000
Cost of Debt	-$160	-$370	+$260	-$150	~ $8,000
Write-Off Amount	**-$16,310**	-$5,430	-$1,220	**-$4,730**	~ $21,500

Findings in bold are statistically significant at the 10% level. Full regression tables with p-values can be found in the Technical Appendix.

22 More details on interest rates and fees can be found in the Appendix.

23 Any recoveries are already deducted from the total write-off amount. The same analyses were also run excluding recoveries, but the results are very similar regarding both the write-off amount and realized contribution margin. The recoveries data used in this study includes guarantees from third-parties (primarily USAID/DFC).

CONCLUSION

This analysis of $1 billion of loans to 552 borrowers over nine years demonstrates a clear and compelling business case for investing in women-led and gender-inclusive agricultural SMEs. It revealed that enterprises with greater women's leadership and participation are more stable and profitable borrowers. They grow rapidly and are less likely to experience significant revenue dips, less likely to default, and their loans yield dramatically higher profits. We also found that investments in these enterprises are catalytic: Root Capital's first-mover financing helped them acquire new sources of financing.

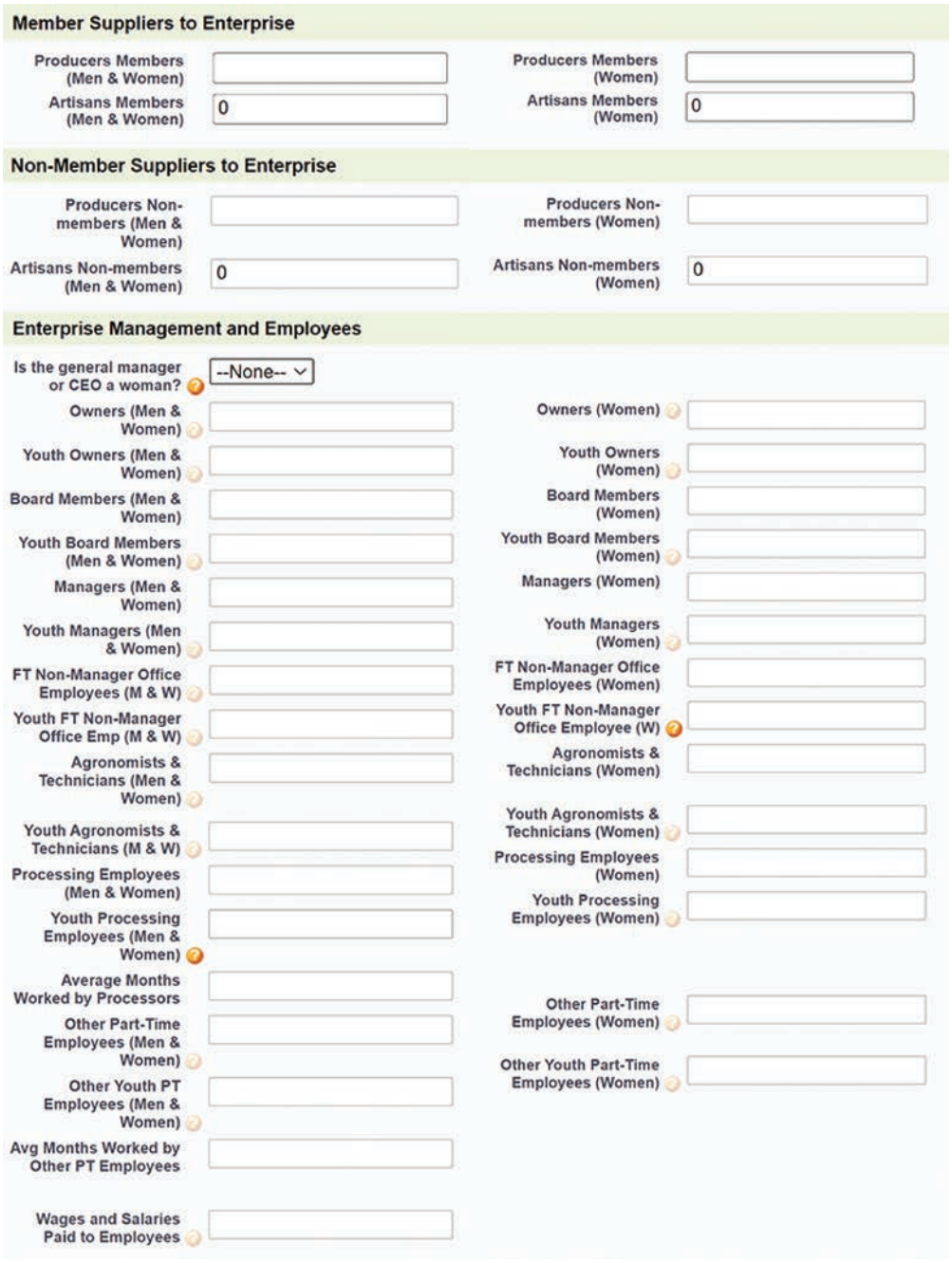
These results are an early step towards building the business case for investing in women in agriculture. It addresses common misconceptions about the risk and return profile of inclusive businesses and sheds light on key differences between more and less gender-inclusive enterprises that can inform the way investors, donors, technical assistance providers, and others work with and support them. This report demonstrates that closing the enormous credit gender gap in agriculture is not only good for women and economies, it generates measurable returns for investors as well.

We hope that financial service providers not only use these findings to inform and grow their own investment in gender-inclusive agri-SMEs, but that they also dig into their data and add diversity and scope to the growing business case for investing in women in agriculture.

APPENDICES

Appendix 1 – Gender Scorecard (Screenshots of Sections)

1.1 Quantitative indicators for Gender Scorecard



Member Suppliers to Enterprise

Producers Members (Men & Women)		Producers Members (Women)	
Artisans Members (Men & Women)	0	Artisans Members (Women)	0

Non-Member Suppliers to Enterprise

Producers Non-members (Men & Women)		Producers Non-members (Women)	
Artisans Non-members (Men & Women)	0	Artisans Non-members (Women)	0

Enterprise Management and Employees

Is the general manager or CEO a woman?	--None--		
Owners (Men & Women)		Owners (Women)	
Youth Owners (Men & Women)		Youth Owners (Women)	
Board Members (Men & Women)		Board Members (Women)	
Youth Board Members (Men & Women)		Youth Board Members (Women)	
Managers (Men & Women)		Managers (Women)	
Youth Managers (Men & Women)		Youth Managers (Women)	
FT Non-Manager Office Employees (M & W)		FT Non-Manager Office Employees (Women)	
Youth FT Non-Manager Office Emp (M & W)		Youth FT Non-Manager Office Employee (W)	
Agronomists & Technicians (Men & Women)		Agronomists & Technicians (Women)	
Youth Agronomists & Technicians (M & W)		Youth Agronomists & Technicians (Women)	
Processing Employees (Men & Women)		Processing Employees (Women)	
Youth Processing Employees (Men & Women)		Youth Processing Employees (Women)	
Average Months Worked by Processors			
Other Part-Time Employees (Men & Women)		Other Part-Time Employees (Women)	
Other Youth PT Employees (Men & Women)		Other Youth Part-Time Employees (Women)	
Avg Months Worked by Other PT Employees			
Wages and Salaries Paid to Employees			

1.2. Qualitative indicators for Gender Scorecard

3.6 Gender Inclusion Activities for Producers or Employees	
In the last year, did the enterprise provide the following policies or programs to producers or employees?	**Yes/No**
Policy prohibiting gender discrimination, including discrimination in hiring or pay based on gender	click arrow
Policy prohibiting sexual harassment (in the workplace or among members) and/or a policy or protocol for reporting incidences of sexual harassment	click arrow
Trainings or workshops for staff and/or producers about gender equality	click arrow
Provide or sponsor childcare for meetings, trainings, or other events	click arrow
Training, mentorship, or other initiatives that support talent mobility for female employees or producers	click arrow
For enterprise staff only: Flexible options for work arrangements (such as working from home, job sharing, flexible work schedules, or maternity or paternity leave)	click arrow
Other *Please specify in Column F*	

1.3. Sample Gender-Inclusiveness Rating for Gender Scorecard

Gender Inclusiveness:

Business Woman Led: Yes / Sí
% Women Owners: 0%
% Women Board Members: 25%
% Women Non-managerial Employees: 54%
% Women Producers & Artisans: 26%
% Women Other Part-Time Employees: 0%
% Women Managers: 33%
% Women Agronomists & Technicians: 0%
% Women Agroprocessing Employees: 0%
% Women Producers, Artisans, Employees: 26%

Yes / Sí
Gender Inclusive?

Appendix 2 – Gender-Inclusive Checklist

Before the training	☐	Explicitly invite women to attend trainingers (via written invitations, telephone calls, etc.).
	☐	Offer to pay for and/or accommodate childcare during training, and make this option explicit in both written and verbal invitations
	☐	Work with the client (agricultural business) to determine any factors that stand in the way of women's participation (e.g., inadequate child care, limited transportation options) and work with business to identify ways to address these barriers.
	☐	For on-site trainings: When possible (and in coordination with the client), invite additional women who may not currently be in leadership roles, but are in training to become or are considered potential candidates for these positions in future.
During the training	☐	Set the stage for broad participation, by asking all participants – women and men – to introduce themselves to the group
	☐	Particularly in setings in which women are the minority, apprach female participants individually and express your expectation that they participate, while also offering to help, especially to women who have had less experience speaking in public forums.
	☐	At the beginning of the training, establish rules against the use of stereotypes, discriminatory language, or jokes. Make explicit that interrupting others is not allowed, and that everyone must listen to everyone else.
	☐	Model inclusive language by avoiding sexist references, including subtle ones (e.g., use of exclusively male pronouns to talk about farmers, manager, etc.).
	☐	Model inclusive behavior by treating all participants with respect and patience, and inviting everyone to provide input.
	☐	At the beginning of the workshop, assess participant literacy levels and pre-existing subject-matter knowledge in order to adapt the teaching plan appropriately, including using depagogical techniques that facilitate broad participation from mixed-level groups.
	☐	Encourage everyone to physically position themselves so as to be involves (e.g., at the table).
	☐	Ensure that the childcare provided meets attendee needs and that everyone can be 100% attentive in the workshop.
	☐	Avoid a case in which women leave workshop sessions to complete domestic tasks by setting women up for success, i.e., holding trainings at appropriate times and locations.
	☐	Motivate women to assume leadership roles in break-out groups.

TECHNICAL APPENDIX

Data Sources

Overview of the Sample

This study analyzes the business and loan performance of Root Capital's clients who closed a loan with Root Capital between 1st of January 2012 and 31st of December 2020.[24] In total, 552 clients form part of the sample. The data examined in this study includes both loan level and client-year level data. The loan level data includes loan performance data as well as Expected Impact Ratings (EIRs). The Social & Environmental Metrics (SEMs) represent the client-year level data.

Loan Performance Data (Loan Level)

The loan performance data covers all General Lines of Credit that were closed between 1st of January 2012 and 31st of December 2020 that were no longer active as of December 2020. Loans that were still active were excluded as ex-post evaluation metrics are not available for those loans. We excluded term loans from the analysis on loan performance as term loans are inherently riskier in nature: balloon payments are harder to monitor and the loan repayments are not triangulated (unlike most of Root Capital's revolving lines of credit, which have triangulated payments with buyers). Furthermore, Root Capital's losses on term loans are primarily in industries outside of coffee and cocoa (industries in which Root has more limited experience). The final sample used for the analysis includes 1,226 loans (358 loans were excluded as they were still active as of December 2020 and/or were term loans). Data used to calculate the loan performance metrics include:

- status, size, yearly average balances, and structure/product type (general line of credit or term loan) of each loan;
- write-offs, recoveries, and revenues (interest payments and closing/disbursement fees) of each loan;
- balances for loans at risk (having a non-current risk rating like "special mention");
- ex-ante probabilities of default; and
- Root Capital's cost of debt.

Social & Environmental Metrics Data (Client-Year Level)

The Social & Environmental Metrics (SEMs) data used in this includes data for all clients that closed a loan between 1st of January 2012 and 31st of December 2020. SEMs data for the client is collected for the last full year for which data is available. Since this can be the previous year or even the year before the previous year, SEMs data points from 2010 until 2019 are used in this study.[25] The sample includes 1,523 data points on the client-year level. Data used from the SEMs include:

- number and gender of a borrower's managers, board members, owners, producers, artisans, and employees in a specific year;
- the borrower's access to other sources of finance in a specific year; and
- sales and payments to producers in a specific year.

Aggregation to the Client Level

In this study, the relation between independent women's participation variables and business, and loan performance is analyzed. The independent variables are either binary or continuous, as described in below. All analyses were conducted at the client level. Client averages are used to aggregate the outcome and control variables that are at the loan level or client-year level to the client level. For continuous independent variables, the average was also used so that there is one observation for each client on the client level. For binary

24 One client was also excluded from the analysis as it was the only loan made to a borrower based outside of the global south during the time period analyzed.

25 In one instance, the SEMs data point from 2020 belonged to a loan that was closed in 2020 and therefore is still included.

independent variables, there is one observation for each client and state of the independent variable combination. When a client changed from women-led to men-led during the analyzed time period, then there will be two observations for that client on the client level.[26] Therefore, the samples on the client level differ depending on whether women-led or gender-inclusive or a continuous gender variable is the independent gender variable.

Linking Loan Level Data with Client-Year Level Data

As the state of the binary independent variable can change over time for a client, the loan level and client-year level datasets needed to be merged to be able to link loan level performance metrics to the right state of the binary independent variable. For example, consider a client who in 2014 closed a loan which was fully repaid and another loan in 2018 on which the client defaulted. If that client was considered gender-inclusive until 2016 but not thereafter, in order to attribute the poor loan performance to the non-gender-inclusive status and the strong loan performance to the gender-inclusive status of the client[27] we need to merge the loan level and client-year level.

Detailed Indicator Descriptions

Independent Variables (Women's Participation)

Women-led (Binary)

The women-led variable is defined according to the "Pursuing Gender Equality Through Investment in Rural Communities - Root Capital Case Study":[28]

As defined by Root Capital, an enterprise that meets one of the following criteria:

- *One or more women hold the position of executive director, senior manager, director of operations, president, or the equivalent level of leadership;*
- *At least 51% of the membership of the cooperative or the membership of the board of directors (or similar governance group) are women;*
- *At least 51% or more of managers are women; or*
- *At least 51% or more of the enterprise is owned by women.*

Gender-inclusive (Binary)

The gender-inclusive variable is also defined according to the "Pursuing Gender Equality Through Investment in Rural Communities - Root Capital Case Study":[29]

As defined by Root Capital, an enterprise in which either over 30% of its employees, artisans, and farmers are women OR over 20% of its employees, artisans, and farmers are women and the enterprise is led by a woman.

Percentage of Female Managers (Continuous)

The number of female managers divided by the total number of managers.

Percentage of Female Employees (Continuous)

The number of female full-time equivalent employees divided by the total number of full-time equivalent employees.

26 Therefore, there are more observations than clients when analyzing the binary independent variables and the term "client level" is strictly speaking not true but still used here for the purpose of simpler language.

27 In this study it is assumed that the point in time when the loan is closed is crucial for attributing the loan performance and expected impact rating to the then-current state of the binary independent variable. In the hypothetical case that a client closed a loan in 2015 and was gender-inclusive until then but not afterwards, the whole loan performance is still attributed to the gender-inclusive status of the client, even if the loan is active for many years.

28 In this study, the variable is recreated as opposed to taking the final value from the SEMs data. This is because the Salesforce formula generates a "No" also if all input arguments (e.g., % female managers) are missing. Here, the value is set to missing if all input arguments are missing in order to not distort the results. Moreover, the ratios determining the input arguments are recreated since the Salesforce formula generates for some ratios 0% even though the denominator is 0 or missing.

29 This variable is also recreated in this study. Here, the recreated women-led variable defined above is taken and the percentage of female employees, artisans, and farmers (producers) is recreated. Missing values for the percentage of female employees, artisans, and farmers (producers) due to the denominator containing the sum of male and female employees, artisans, and farmers (producers) being 0 lead to a missing value of the gender-inclusive variable.

Dependent Variables (Business and Loan Performance)

Revenue Growth

Compound Annual Growth Rate (CAGR)

A measure of revenue growth calculated using the sales of the last and first year for which data is available as well as the number of years in between.[30] CAGRs were winsorized at the 97.5th quantile to account for outliers.

Average Annual Growth Rate (AAGR)

A measure of revenue growth calculated by averaging annual growth rates across the time period of available data. AAGRs were winsorized at the 97.5th quantile to account for outliers.

Business Instability

Dip in Revenues of >25% (%; binary)

A binary variable indicating whether a client ever experienced a revenue dip of more than 25% between two consecutive years during the analyzed time period. As the data entails gaps (i.e., some years do not have sales data for a client while the previous and next years do have data), these gaps are filled with linearly interpolated values.[31]

Variation in Revenues (thousand $, continuous)

The standard deviation of the sales values of each client measuring the variation in actual dollar sales values. Like the growth variables, the standard deviations across clients are winsorized at the 97.5th quantile to account for outliers.

Access to additional sources of financing

Graduation from Root Capital only (binary)

Whether a client managed to obtain access to social (from a social lender or a development/government bank or receives buyer advance) or commercial (from a commercial bank) financing when it only had access to financing from Root Capital at the time of their first loan from Root Capital.

Graduation to Commercial (binary)

Whether a client managed to obtain access to commercial financing when it either only had financing from Root Capital or from Root Capital and another social lender at the time of their first loan from Root Capital.[32]

Default (%, continuous)

The percentage of loans a client did not repay in full.

Realized Contribution Margin (thousand $, continuous)

Loan income (i.e. total revenues) minus write-offs and the cost of debt.

Total Revenues (thousand $, continuous)

The sum of loan interest payments (interest rate multiplied by loan amount at origination), and the total realized fee revenue (closing and disbursement fees). The closing fee revenue is the closing fee rate multiplied by loan amount.

Interest Rate (%, continuous)

The interest rate Root Capital charges a borrower. The rate applied to a given loan depends on several factors including the borrowers risk rating and local interest rates.

Total Realized Fee Revenue ($, continuous)

Includes closing and disbursement fee revenues.

Closing Fee Rate (%, continuous)

The rate Root Capital charges a borrower at the time of loan closing.

Closing Fee Revenue ($, continuous)

The closing fee rate multiplied by the loan size.

Disbursement Fee Revenue (%, continuous)

The disbursement fee rate multiplied by the disbursement amount.

Cost of Debt ($, continuous)

Root Capital's cost of debt (2.63%, on average across the portfolio analyzed in this report) multiplied by a loan's average balance during a given year.

30 This was only calculated for those clients that have at least two years of Sales data available as otherwise no development in Sales figures is visible. In one case, the Sales value was 0. This value was set to missing.

31 Consider a hypothetical client that has a sales value of 500,000 in 2015, a missing sales value for 2016, and a sales value of 100,000 for 2017. Without interpolation, no revenue dip of over 25% would be detected since there is no data available in two consecutive years. However, there definitely was a revenue dip of over 25% either from 2015 to 2016 or from 2016 to 2017.

32 These variables are only calculated for those clients that have at least two years of data about their access to finance available as otherwise no development is visible.

Descriptive Statistics

Independent (Women's Participation) Variables

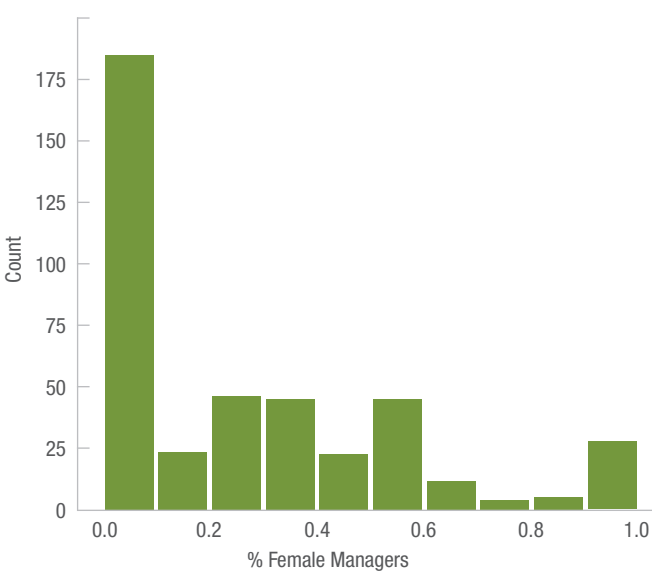
Summary Statistics of Independent Variables

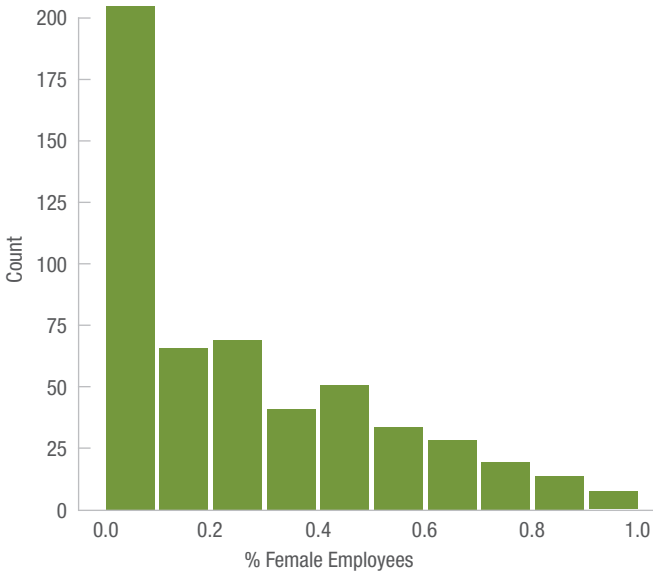
The following table provides summary statistics of the independent women's participation variables used in this study. As shown, the total number of observations differs between the continuous independent variables (% women board members, % women managers, % women employees, % women producers: 552 observations) and the binary independent variables (women-led: 611, gender-inclusive: 644). This is because there can be more than one observation for a client when a binary independent women's participation variable is analyzed while there is always one observation for a client when a continuous independent women's participation variable is analyzed.

	count	mean	min	25%	50%	75%	max	missing
Women-led	501	0.26	0	0	0	1	1	110
Gender-inclusive	626	0.42	0	0	0	1	1	18
% Female Board Members	384	24%	0%	4%	22%	33%	100%	168
% Female Managers	417	25%	0%	0%	19%	42%	100%	135
% Female Employees	527	25%	0%	0%	19%	42%	100%	25
% Female Producers	528	28%	0%	15%	23%	35%	100%	24

Histograms of Continuous Independent Variables

The following graphs show the histograms for each continuous independent variable.





Cross Tabulations of Independent Variables by Control Variables

The following tables show the cross tabulations of each independent variable by each control variable indicating the absolute frequency. Dark and light green indicate the relative frequency (measured by the overall number of the control variables in the bottom row) above 50% and 25%, respectively. The continuous independent variables are binned into four discrete intervals for the purpose of these cross tabulations. Moreover, the loan size and business size control variables are binned into three buckets for the purpose of these cross tabulations.

	Industry				Region					
Women-led	**Cocoa**	**Coffee**	**Nuts+**	**Other**	**ASI**	**EAF**	**MAC**	**SAM**	**WAF**	**All**
No	27	225	42	77	12	100	109	117	33	371
Yes	7	79	19	25	7	36	42	31	14	130
Missing	11	56	24	19	1	16	43	41	9	110
All	**45**	**360**	**85**	**121**	**20**	**152**	**194**	**189**	**56**	**611**

	Loan Size (thousand $)				Business Revenues (thousand $)				
Women-led	**<=250**	**250-500**	**>500**	**Missing**	**<=750**	**750-2,500**	**>2,500**	**Missing**	**All**
No	101	95	114	61	120	127	124	0	371
Yes	34	28	36	32	52	41	37	0	130
Missing	32	31	22	25	11	6	7	86	110
All	**167**	**154**	**172**	**118**	**183**	**174**	**168**	**86**	**611**

	Industry				Region					
Gender-inclusive	**Cocoa**	**Coffee**	**Nuts+**	**Other**	**ASI**	**EAF**	**MAC**	**SAM**	**WAF**	**All**
No	33	238	40	55	11	60	131	138	26	366
Yes	11	138	45	66	9	94	68	55	34	260
Missing	0	14	2	2	0	1	6	11	0	18
All	**44**	**390**	**87**	**123**	**20**	**155**	**205**	**204**	**60**	**644**

	Loan Size (thousand $)				Business Revenues (thousand $)				
Gender-inclusive	**<=250**	**250-500**	**>500**	**Missing**	**<=750**	**750-2,500**	**>2,500**	**Missing**	**All**
No	104	86	122	54	87	107	116	56	366
Yes	72	62	60	66	103	81	56	20	260
Missing	3	4	4	7	1	1	4	12	18
All	**179**	**152**	**186**	**127**	**191**	**189**	**176**	**88**	**644**

	Industry				Region					
% Female Managers	Cocoa	Coffee	Nuts+	Other	ASI	EAF	MAC	SAM	WAF	All
0-25	20	163	23	38	11	48	68	95	22	244
25-50	7	55	21	34	3	48	30	20	16	117
50-75	2	14	6	0	2	7	6	6	1	22
75-100	2	20	3	9	1	7	11	13	2	34
Missing	10	70	24	31	1	28	55	39	12	135
All	**41**	**322**	**77**	**112**	**18**	**138**	**170**	**173**	**53**	**552**

	Loan Size (thousand $)				Business Revenues (thousand $)				
% Female Managers	<=250	250-500	>500	Missing	<=750	750-2,500	>2,500	Missing	All
0-25	70	69	79	26	71	90	83	0	244
25-50	30	26	39	22	46	33	38	0	117
50-75	7	5	7	3	8	7	7	0	22
75-100	11	7	7	9	14	11	9	0	34
Missing	42	33	26	34	29	17	13	76	135
All	**160**	**140**	**158**	**94**	**168**	**158**	**150**	**76**	**552**

	Industry				Region					
% Female Employees	Cocoa	Coffee	Nuts+	Other	ASI	EAF	MAC	SAM	WAF	All
0-25	30	169	40	64	8	49	111	104	31	303
25-50	9	94	11	16	5	28	37	50	10	130
50-75	2	36	13	15	4	34	11	10	7	66
75-100	0	13	7	8	0	19	3	3	3	28
Missing	0	10	6	9	1	8	8	6	2	25
All	**41**	**322**	**77**	**112**	**18**	**138**	**170**	**173**	**53**	**552**

	Loan Size (thousand $)				Business Revenues (thousand $)				
% Female Employees	<=250	250-500	>500	Missing	<=750	750-2,500	>2,500	Missing	All
0-25	82	80	85	56	82	70	86	65	303
25-50	38	32	45	15	35	48	46	1	130
50-75	22	18	18	8	31	23	12	0	66
75-100	11	6	5	6	12	12	4	0	28
Missing	7	4	5	9	8	5	2	10	25
All	**160**	**140**	**158**	**94**	**168**	**158**	**150**	**76**	**552**

Correlations Among Independent Variables

The following table displays a correlation matrix for the independent gender variables. Note that pairs of correlation coefficients below and above the diagonal can be (slightly) different. The reason is the different samples on the client level depending on whether a binary women's participation variable or a continuous women's participation variable is the independent variable. Each row displays the correlation coefficients for the sample on the client level that is produced for the independent variable indicated in the first column.

	Women-led	Gender-inclusive	% Female Managers	% Female Employees
Women-led		0.34	0.69	0.08
		(0.000)	(0.000)	(0.078)
Gender-inclusive	0.32		0.25	0.35
	(0.000)		(0.000)	(0.000)
% Female Managers	0.70	0.30		0.08
	(0.000)	(0.000)		(0.126)
% Female Employees	0.08	0.35	0.08	
	(0.091)	(0.000)	(0.126)	

Outcome (Performance) Variables

The following table displays summary statistics for each outcome variable. The sample on the client level that is produced for one of the continuous independent variables (i.e., one observation for each client) is used for these summary statistics.

	count	mean	std	min	25%	50%	75%	max	missing
Revenue Growth – CAGR (ppts)	318	24.47%	56.24%	-63.31%	-1.11%	10.17%	28.25%	272.02%	234
Revenue Growth – AAGR (ppts)	297	47.35%	95.45%	-76.18%	2.61%	18.06%	45.90%	429.27%	255
Business Instability – Dip in Revenues of >25% (ppts)	319	35.11%	47.81%	0.00%	0.00%	0.00%	100.00%	100.00%	233
Business Instability – Variation in Revenues (thousand $)	319	1168.32	1888.29	0.00	145.61	440.41	1166.98	8784.37	233
Graduation from RC only (ppts)	101	64.36%	48.13%	0.00%	0.00%	100.00%	100.00%	100.00%	451
Graduation to Commercial (ppts)	172	34.30%	47.61%	0.00%	0.00%	0.00%	100.00%	100.00%	380
Default (ppts)	458	13.67%	31.87%	0.00%	0.00%	0.00%	0.00%	100.00%	94
Realized Contribution Margin (thousand $)	452	5.84	88.69	-743.78	4.82	12.28	27.59	672.52	100
Total Revenues (thousand $)	452	35.69	60.09	0.88	9.98	20.96	40.58	967.24	100
Interest Rate (ppts)	458	11.17%	2.53%	5.50%	10.00%	11.00%	11.81%	30.77%	94
Total Realized Fee Revenue ($)	458	5671.24	6155.40	0.00	1598.11	3269.87	7788.69	41432.01	94
Closing Fee Rate (ppts)	458	0.13%	0.30%	0.00%	0.00%	0.00%	0.00%	2.00%	94
Closing Fee Revenue ($)	458	666.82	1970.78	0.00	0.00	0.00	0.00	20000.00	94
Disbursement Fee Rate (ppts)	458	0.88%	0.35%	0.00%	0.76%	1.00%	1.00%	2.00%	94
Disbursement Fee Revenue ($)	458	5004.42	5781.93	-3000.00	1201.98	2940.00	6991.63	41432.01	94
Cost of Debt (thousand $)	452	8.21	17.92	0.07	1.83	3.95	8.85	294.73	100
Write-off Amount (thousand $)	452	21.64	86.32	-269.43	0.00	0.00	0.00	897.63	100

Regression Results

The following tables present the results from the regression analyses. For each dependent variable, we present the coefficient as well as the p-value. Bolded numbers are statistically significant at the 10% level.

Business Outcomes	Women-led Enterprise	Gender-inclusive Enterprise	10 ppt increase in women managers	10 ppt increase in women employees
Revenue Growth – CAGR (ppts)	-0.04	-10.42	-0.21	**-2.74**
	(0.996)	(0.153)	(0.874)	**(0.062)**
Revenue Growth – AAGR (ppts)	-5.20	**-28.30**	-0.11	**-5.88**
	(0.746)	**(0.027)**	(0.964)	**(0.033)**
Business Instability – Dip in Revenues of >25% (ppts)	-4.00	-0.22	**-2.04**	0.57
	(0.516)	(0.967)	**(0.026)**	(0.663)
Business Instability – Variation in Revenues (thousand $)	**-378.93**	**-386.15**	-26.74	-32.23
	(0.010)	**(0.004)**	(0.282)	(0.288)
Graduation from RC only (ppts)	8.74	**20.77**	2.44	0.58
	(0.449)	**(0.038)**	(0.120)	(0.814)
Graduation to Commercial (ppts)	11.07	**11.75**	**3.42**	**2.95**
	(0.176)	**(0.084)**	**(0.003)**	**(0.079)**

Loan Outcomes	Women-led Enterprise	Gender-inclusive Enterprise	10 ppt increase in women managers	10 ppt increase in women employees
Default (ppts)	-4.12	1.42	0.06	**-1.21**
	(0.159)	(0.616)	(0.908)	**(0.067)**
Realized Contribution Margin (thousand $)	**17.85**	4.42	**1.90**	**4.02**
	(0.001)	(0.560)	**(0.033)**	**(0.038)**
Total Revenues (thousand $)	1.38	-1.37	0.94	-0.85
	(0.711)	(0.666)	(0.120)	(0.212)
Interest Rate (ppts)	**-0.60**	-0.09	-0.05	**-0.15**
	(0.006)	(0.708)	(0.152)	**(0.008)**
Total Realized Fee Revenue ($)	551.94	38.21	5.42	105.98
	(0.289)	(0.933)	(0.922)	(0.184)
Closing Fee Rate (ppts)	0.05	**0.05**	0.01	**0.01**
	(0.159)	**(0.089)**	(0.275)	**(0.013)**
Closing Fee Revenue ($)	**450.34**	**404.89**	**65.10**	**115.95**
	(0.074)	**(0.084)**	**(0.055)**	**(0.003)**
Disbursement Fee Rate (ppts)	**-0.07**	**-0.06**	-0.01	**-0.01**
	(0.087)	**(0.084)**	(0.107)	**(0.075)**
Disbursement Fee Revenue ($)	101.60	-366.68	-59.68	-9.97
	(0.830)	(0.421)	(0.290)	(0.891)
Cost of Debt (thousand $)	-0.16	-0.37	0.26	-0.15
	(0.883)	(0.703)	(0.155)	(0.472)
Write-off Amount (thousand $)	**-16.31**	-5.43	-1.22	**-4.73**
	(0.001)	(0.482)	(0.127)	**(0.022)**

Number of Observations

Regression Results – Number of Observations

The following tables shows the number of observations for each regression displayed in the regression results above.

Regression Results – Number of Observations	Women-led enterprises	Gender-inclusive enterprises	10 ppt increase in women managers	10 ppt increase in women employees
Revenue Growth – CAGR (ppts)	321	335	306	316
Revenue Growth – AAGR (ppts)	299	309	286	295
Business Instability – Dip in Revenues of >25% (ppts)	322	336	307	317
Business Instability – Variation in Revenues (thousand $)	322	336	307	317
Graduation from RC only (ppts)	102	108	98	100
Graduation to Commercial (ppts)	177	181	166	171
Default (ppts)	408	506	357	442
Realized Contribution Margin (thousand $)	402	499	352	437
Total Revenues (thousand $)	402	499	352	437
Interest Rate (ppts)	408	506	357	442
Total Realized Fee Revenue ($)	408	506	357	442
Closing Fee Rate (ppts)	408	506	357	442
Closing Fee Revenue ($)	408	506	357	442
Disbursement Fee Rate (ppts)	408	506	357	442
Disbursement Fee Revenue ($)	408	506	357	442
Cost of Debt (thousand $)	402	499	352	437
Write-off Amount (thousand $)	402	499	352	437

Additional Information on the Write-off Amount

The coefficient for the outcome variable Write-off Amount is positive and statistically significant for the independent variables women-led and 10-ppt increase in women employees, as seen in the regression results above. The main driver of these findings seems to be the difference in the write-off amount, as described above.

To further investigate the reason for these large and significant regression results, we analyzed the data looking only at clients that defaulted at least once.

Regression Results – Write-off Amount for Defaulting Clients

The following table shows the results of regressing write-off amount on the independent variables for only those clients that defaulted at least once (to be precise, there is one observation for each client and state of the independent variable combination for binary independent gender variables). These regressions use the same control variables as the main analysis. Coefficients (and the corresponding p-values displayed below in parentheses) that are statistically significant at the 10% level are in bold.

Regression Results – Write-off Amount for Defaulting Clients	Women-led enterprises	Gender-inclusive enterprises	10 ppt increase in women managers	10 ppt increase in women employees
Number of Observations	68	82	58	77
Write-off Amount (thousand $)	**-79.72**	-50.29	-8.22	**-17.29**
	(0.003)	(0.308)	(0.124)	**(0.048)**

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