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# Social and financial performance: *Better together?*

*Aldo Moauro – MicroFinanza Rating  
Michael Rauenhorst – Moody's Analytics*

*14 November 2014  
Luxembourg City, Luxembourg*





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## Social and financial performance: *Better together?*

*Financial results of Microfinance Institutions: Social performance matters*

*Aldo Moauro – MicroFinanza Rating*

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## ABOUT US| MicroFinanza Rating

- **Private and independent**, leading international rating agency specialized in inclusive finance and social businesses.
- First specialized microfinance rating agency licensed by a central bank (Ecuador in 2007) and now also in Bolivia and the Philippines
- More than 1000 evaluations in 80+ countries. (200 SR conducted so far)
- Headquarters are in **Milan** (Italy) with 5 offices in 4 continents  
Ecuador, Bolivia, Mexico,  
Kenya,  
Kyrgyz Rep, Philippines





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## The study

- Research on the relationships between social and financial performance of microfinance institutions
- The Centre for Responsible Banking & Finance at the University of St. Andrews (UK) applies advanced statistical techniques to the in depth social performance data from MicroFinanza Rating
- For the first time, joining forces to study the relationship between social and financial performance of microfinance institutions

## Conceptual view

- A linear relationship between the social responsibility and the financial performance of microfinance institutions unlikely exists
- There is a sensible maximum investment of corporate resources in social responsibility beyond which any further investment is unlikely to translate in additional financial outcomes
- It is also unlikely that any organization and especially a microfinance institution could afford to disregard social responsibility altogether and treat its clients and employees inhumanly

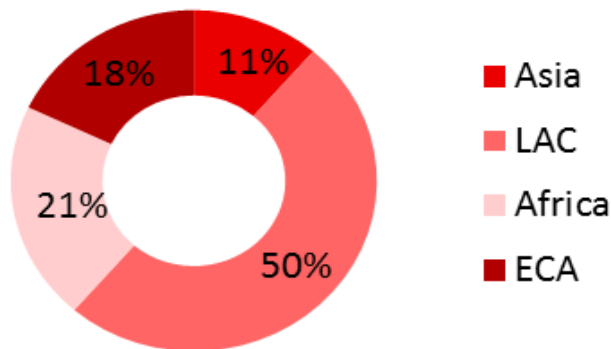


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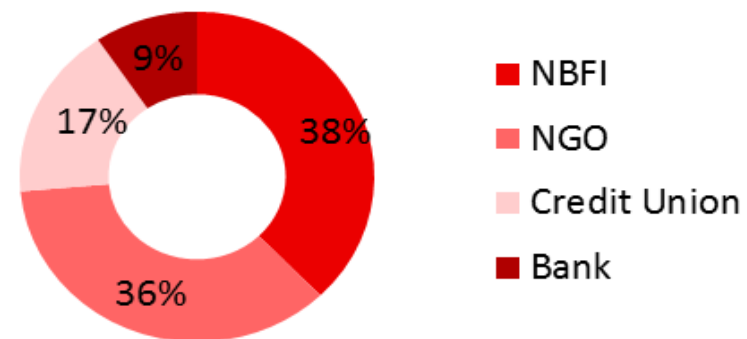
## Sample of the study

- 115 MFIs
- High quality data (only from social and financial ratings performed by MFR)

**Social Ratings by region**



**Social Ratings by charter type**

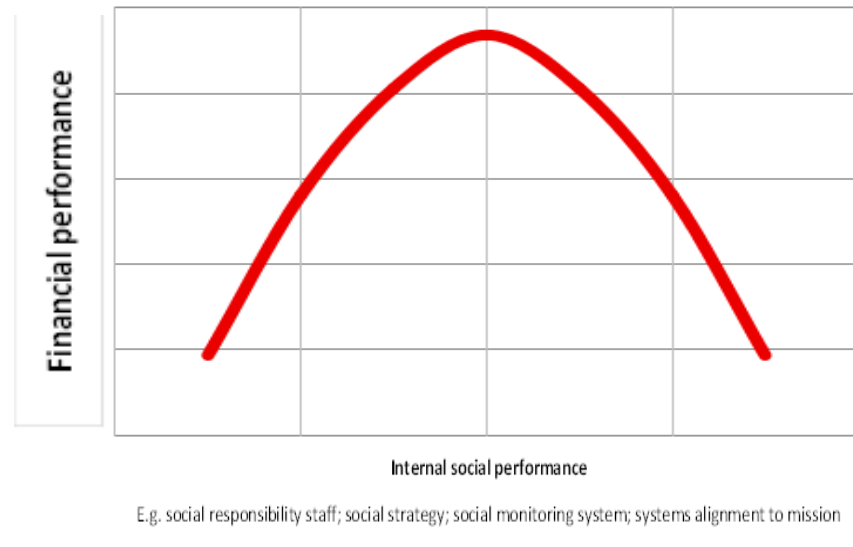




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## Internal social performance

- Is directed at *employees and other resources within an organization*. Internal social performance enhances financial performance (e.g. through employee motivation) but loses its positive financial impact after a certain point
- The relationship between internal social performance and financial performance has the inverse parabolic shape of a *U heads down*



## External social performance

- Is directed at clients and resources outside of the organization for which the organization competes with its peers
- Client protection and social responsibility to the community and the environment



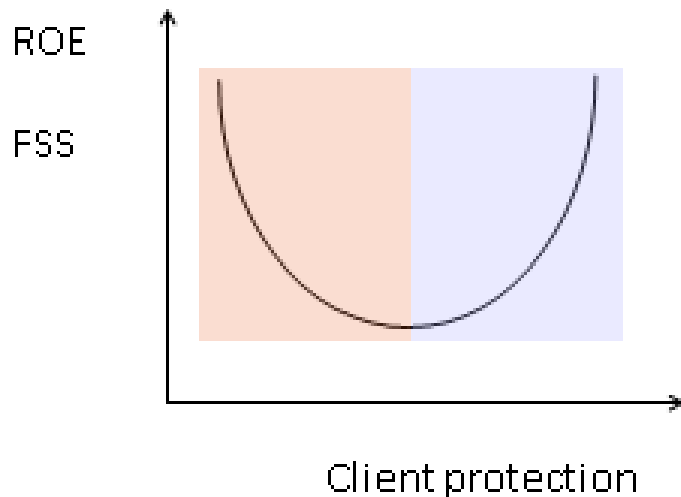


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## External social performance

### U shaped relationship:

- client protection
- financial performance



- Building client protection systems from scratch can be costly;
- But the MFI's efforts to implement client protection will pay off once the MFI has reached the client protection "minimum critical mass" necessary to build the clients' loyalty and the trust of the government and investors.



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## Conclusion of the study

- Clear and strong **U shaped relationship** between financial performance and client protection and social responsibility towards the community and the environment especially for for-profit microfinance institutions
- Improving the client protection, from a weak to an adequate level, results in lower financial gains, but upgrading the client protection from an adequate to good and very good goes along with **higher financial performance**.
- Building client protection systems from scratch can be costly, but the MFI's efforts to implement client protection will pay off once the MFI has reached the client protection **"minimum critical mass"** necessary to build the clients' loyalty and the trust of the government and investors.

## Conclusions (2)

- The relationship between social performance and financial performance of microfinance institutions is unlikely simple and linear
- Social performance simply matters for the financial performance of microfinance institutions

[http://www.microfinanzarating.com/images/stories/Social\\_performance\\_matters\\_MicroFinanza\\_Rating\\_University\\_St.\\_Andrews\\_May\\_2012.pdf](http://www.microfinanzarating.com/images/stories/Social_performance_matters_MicroFinanza_Rating_University_St._Andrews_May_2012.pdf)



## Social and financial performance: *Better together?*

*Developing a Probability of Default Model for Microfinance Institutions*

*Michael Rauenhorst– Moody's Analytics*

*14 November 2014  
Luxembourg City, Luxembourg*

**MOODY'S**  
ANALYTICS



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- **Moody's Analytics Social Performance Group**
  - Established to develop tools to analyze and measure social outcomes in microfinance and impact investing
  - Developed the Social Performance Assessment for microfinance institutions
    - An independent, globally comparable appraisal of a microfinance institution's (MFI's) social performance practices that combines granular grades with supporting commentary.



Granular Analysis of MFI Performance and Changes Over Time

### SOCIAL PERFORMANCE ASSESSMENT

### Social Performance Assessment: PF Microfinance Philippines

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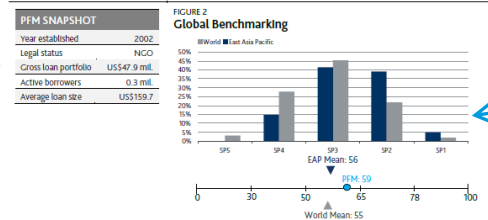
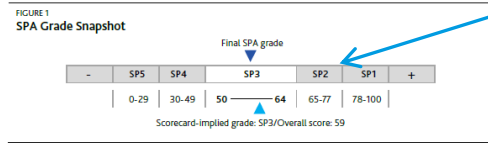
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Benchmarking Performance Against Different Peer Groups



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## ■ Importance of Calculating Probability of Default

- Problem with correlation
  - Correlation is not causality
  - Knowing the correlation alone doesn't change behavior
- Why probability of default and model accuracy (AR) is more useful
  - Can test for causality (Chi Square)
  - Risk modeling can change behavior

## ■ How to the develop the best model?

- Most predictive of events of default
  - Must be careful about using indicators of financial health (e.g. PAR 30)
- Optimizing the mix of social and financial factors
  - Can social factors capture risks better than financial factors?



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## 46 Single Factors Analyzed - 21 factors recommended for further exploration in MFA

Category	Factor Name	AR*	Default Rate Relationship	Missing %	Recommendation	Comments
Sustainability/ Profitability	GrossMargin	36%	Good	2%	✓	
	OperatingMargin	-13%	Counterintuitive	2%	✗	
	ROE	-5%	Counterintuitive	3%	✗	
	ROA	-7%	Counterintuitive	3%	✗	
	Operational_self_sufficiency	-11%	Counterintuitive	2%	✗	
	InterestCoverage	37%	Good	2%	✓	
Asset/Liability Management	Yield_on_Loan_Portfolio	-5%	Counterintuitive	2%	✗	
	Gross_Yield_on_Loan_Portfolio	-9%	Counterintuitive	2%	✗	
	CurrentRatio	-28%	Counterintuitive	2%	✗	
	Funding_expense_ratio	39%	Strong	1%	✗	High correlation with LiabtoAssets
	Financial_Expense_ratio	46%	Strong	1%	✓	
	LiabtoNetWorth	12%	Good	2%	✗	High correlation with LiabtoAssets
	LiabtoAssets	13%	Good	2%	✓	
	LiabtoEBITDA	-7%	Counterintuitive	2%	✗	
Growth	CashtoLiabs	19%	Good	0%	✓	
	Total_RevenueGrowth			39%	✗	High missing %
	GrossPortfolioGrowth			38%	✗	High missing %
Size	LoanPortfolio_CPIAdj	-13%	Counterintuitive	0%	✗	
	Total_Assets_CPIAdj	-14%	Counterintuitive	2%	✗	
	Avg_outstanding_loansize	4%	Weak	5%	✓	Used as a proxy for Income level of the borrowers

\*AR = Accuracy Ratio



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## Single Factor Analysis Performance : 21 factors recommended for further exploration in MFA (cont'd)

Category	Factor Name	AR*	Default Rate Relationship	Missing %	Recommendation	Comments
Efficiency/ Productivity	Loan_officer_productivity	23%	Good	5%	✓	
	Personnel_productivity	27%	Good	5%	✓	
	Branch_Productivity	18%	Good	6%	✓	
	PBT_per_loan_officer	-8%	Counterintuitive	6%	✗	
	PBT_per_employee	-17%	Counterintuitive	6%	✗	
	PBT_per_branch	3%	Moderate	7%	✓	
	RevenuetoTotalAsts	12%	Moderate	2%	✓	
	Operating_expense_ratio	28%	Good	0%	✓	
	Cost_per_borrower	19%	Good	5%	✓	
	Avg_portfolio_per_credit_officer	6%	Good	4%	✓	
Portfolio Quality	PAR_30_Ratio	-8%	Counterintuitive	4%	✗	
	PAR_180_Ratio	-32%	Counterintuitive	8%	✗	
	OnTime_Portfolio	1%	Good	4%	✓	
	Writeoff_Ratio	8%	Moderate	7%	✓	
	Risk_coverage_ratio	11%	Moderate	6%	✓	
	LoanLossReserve_Ratio	-1%	Moderate	2%	✗	
	Arrears_rate	-2%	Weak	9%	✗	
	Pct_Refinanced			14%	✗	High missing %
Others	Avg_maturity_of_loans			23%	✗	High missing %
	loans_per_borrower	32%	Strong	6%	✓	Used as a proxy for Debt to Income ratio of borrowers
	Pct_Urban_Clients_Volume	23%	Good	0%	✓	
	Pct_Female_Clients_Volume	29%	Good	5%	✓	
	Pct_Revenue_From_Investments	-1%	Counterintuitive	1%	✗	
	Pct_Group_Loans			20%	✗	High missing %
	Type_Of_Loans	3%	Moderate	0%	✗	Low diversity of responses and very low accuracy ratio
	Loans_to_Ind_Types	10%	Good	0%	✓	Used as a proxy for portfolio diversity





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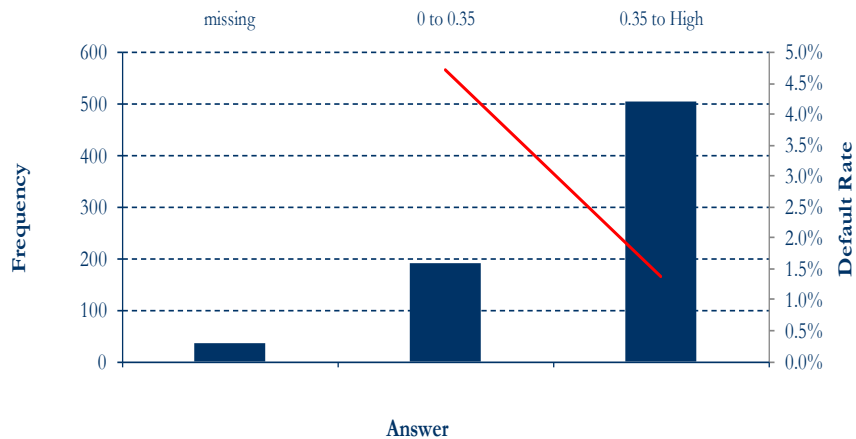
## Single Factor Analysis

### Pct\_Female\_Clients\_Volume

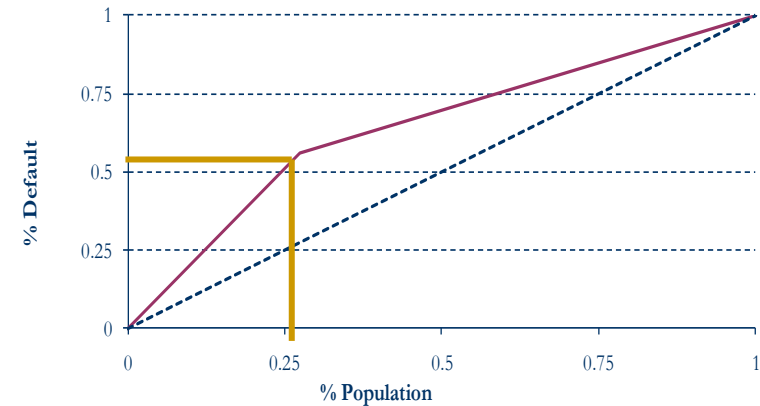
Key statistics: Relative Entropy 0.88, Accuracy Ratio 29%



Frequencies and Default Rates for Pct\_Female\_Clients\_Volume



CAP Curve of Pct\_Female\_Clients\_Volume



- » This factor performs adequately with moderate discriminatory power
- » Good relationship between the responses and the default rate i.e. higher the score lower the default rate



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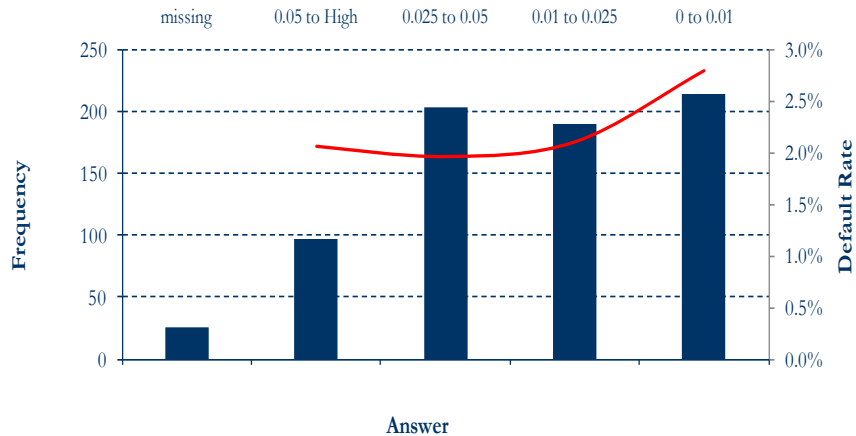
## Single Factor Analysis

### PAR 30 Ratio

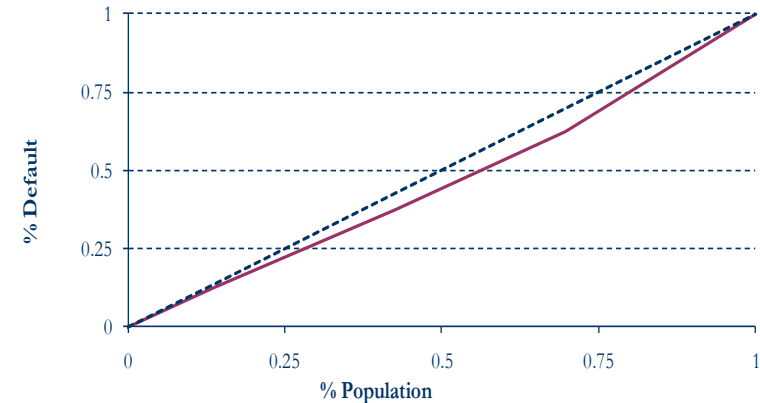
Key statistics: Relative Entropy 0.96, Accuracy Ratio -8%



Frequencies and Default Rates for PAR\_30\_Ratio



CAP Curve of PAR\_30\_Ratio



- » This factor performs inadequately with no discriminatory power
- » Counterintuitive relationship between the responses and the default rate



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## Beta Model – Factor Weights

Section	Factor Name	Factor AR	Model 1	Model 2	Model 3	Model 4	Model 5
Sustainability/Profitability	GrossMargin	36%					
	InterestCoverage	37%					
Asset/Liability Management	Financial_Expense_ratio	46%	22.4%	14.0%	18.2%	32.1%	26.7%
	LiabtoAssets	13%					
	CashtoLiabs	19%		7.9%	11.6%		
Size	Avg_outstanding_loansize	4%	15.5%	13.7%	14.8%		
Efficiency/ Productivity	Loan_officer_productivity	23%					
	Personnel_productivity	27%					
	Branch_Productivity	18%		8.6%			
	PBT_per_branch	3%					
	RevenuetoTotalAsts	12%					
	Operating_expense_ratio	28%	17.8%	14.0%	16.0%	25.1%	21.2%
	Cost_per_borrower	19%					
Portfolio Quality	Avg_portfolio_per_credit_officer	6%					
	OnTime_Portfolio	1%					
	Writeoff_Ratio	8%					
Others	Risk_coverage_ratio	11%					
	loans_per_borrower	32%	17.6%	14.4%	15.2%	19.5%	18.2%
	Pct_Urban_Clients_Volume	23%		7.8%			14.6%
	Pct_Female_Clients_Volume	29%	26.7%	19.5%	24.2%	23.4%	19.3%
	Loans_to_Ind_Types	10%					
<b>Number of Factors</b>			5	8	6	4	5
<b>Model AR</b>			69.5%	77.8%	73.4%	65.5%	69.4%

- All models do not give any weight to sustainability/profitability and portfolio quality factors



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## Candidate Social Factors

Candidate social factors were based on availability of reliable data.  
Data sourced from the MIX and analyzed with Moody's SPA

Shows Causality Shows Correlation

Variable	ProbChiSq	AR
Pricing Transparency Practices	0.463	6%
Disclosure of components of pricing	0.383	9%
Manner of communication of pricing	0.106	16%
Debt Collection Practices	0.059	27%
Specific debt collection policies	0.218	17%
Definition of acceptable and unacceptable collection practices	0.218	17%
Voluntarily adopted consumer protection standards	0.060	27%
Range of Products offered	0.159	24%
Policies included in Code of Ethics	0.351	15%
Written policies on hiring women	0.111	18%
Corruption Score	0.098	19%

Low AR

Probability of  
chance  
occurrence is  
high

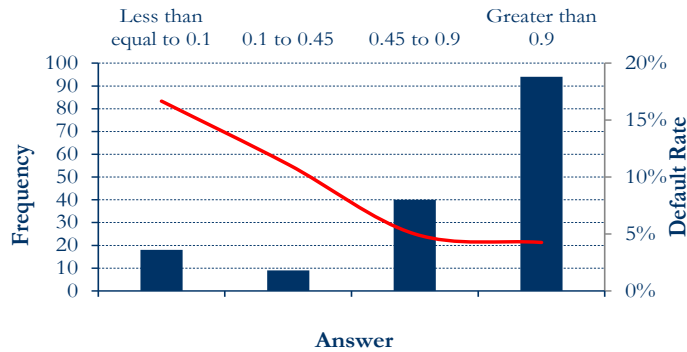


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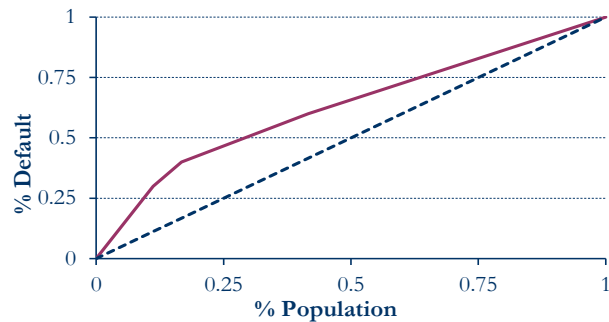
# Accepted Social Variables

## Debt Collection Practices

Frequencies and Default Rates for Debt Collection Practices

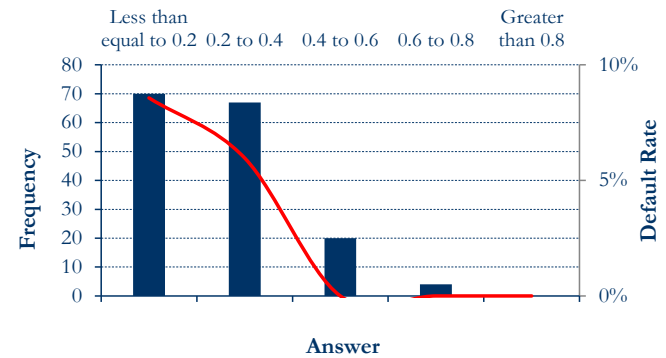


CAP Curve of Debt Collection Practices

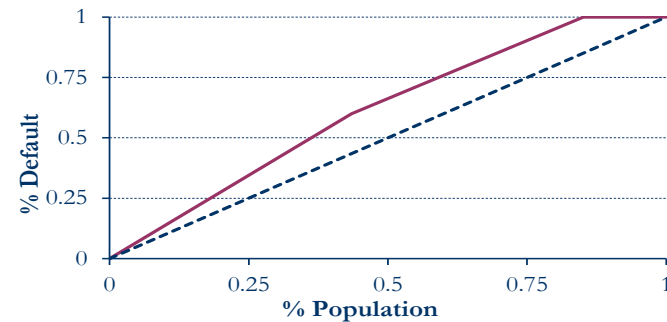


## Range of Products Offered

Frequencies and Default Rates for Range of Products offered



CAP Curve of Range of Products offered





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## Combined Model

Combining the Quantitative and Qualitative factors give an AR of 79.0% (versus 73.4%)

Section	Section Weight	Factor	Factor Weight	Final Weight
Quantitative Score	64%	Cash to Liabilities	13.77%	8.9%
		Loans per borrower	16.48%	10.6%
		Operating expense ratio	22.62%	14.6%
		Financial Expense ratio	26.19%	16.9%
		Percent Female Clients Volume	20.94%	13.5%
Qualitative Score	35.6%	Debt Collection Practices	38.9%	13.9%
		Range of Products offered	61.1%	21.8%



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