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The Miracle of Microfinance? Evidence from a Randomized Evaluation

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Experimental economics

November 2024

Publication: [Banerjee et al., 2015] article in the journal American Economic.

Objective:. Evaluation of a group microcredit program targeting women who are not necessarily entrepreneurs.

Location: Hyderabad, India (52 randomly selected neighborhoods).

Relevant results

- Increase in Microcredits: 8.4 percentage point increase in microloan uptake.

Institutions Involved

- Centre for Micro Finance (CMF), IFMR, Chennai.
- Spandana: Fast-growing microfinance institution.

Areas Evaluated

- Consumption, business start-ups, business income.
- Human development: Education, health, women's empowerment.

Rapid Expansion: Last 10 to 15 years.
Global Impact:
- Increase in families benefiting from microcredit.
- From 7.6 million in 1997 to 137.5 million in 2010 (Microcredit Summit, 2012).

Microcredit and Poverty Reduction
- Poverty Alleviation Expectation: Generates hope for rapid poverty reduction.
- International Recognition: Nobel Peace Prize (2006) awarded to Mohammed Yunus and Grameen Bank for their contribution to global poverty reduction.

Figure 1: Muhammad Yunus. Source: Biografiasyvidas.

Critical Information on Microcredit: New York Times article:

- Relating to suicides due to over-indebtedness.
- Reddy Subrahmanyam (Andhra Pradesh) accuses MFIs of making "hyper-profits at the expense of the poor".

Misleading anecdotes: Stories of success or over-indebtedness do not reflect the effect on the average borrower.
Insufficient representative data: They do not allow identifying the causal effect of access to microfinance, as clients are self-selected.
Choice of locations: MFIs choose certain towns to operate in, complicating evaluation.

First randomized evaluation:

- Analyzes group microcredit model targeting women not necessarily entrepreneurs.
- Follow-up of households for 3 to 3.5 years, necessary to detect medium-term impacts.

Los datos utilizados incluyen los precios de cierre diarios de los siguientes activos financieros: COPEC, ENTEL, Falabella, CMPC, Aesandes (Gener), Besalco, Watts y SALMOCAM, además de los índices IPSA e IGPA, desde enero de 2018 a diciembre de 2023. **Fuente:** Investing y Yahoo Finance.

Los datos del Banco Central incluyen los bonos del Banco Central a 10 años en U.F. **Fuente:** Banco Central de Chile.

Los datos utilizados deben tener como propiedad que la distribución de sus errores sea simétrica, para poder utilizar una distribución elíptica en el modelo.
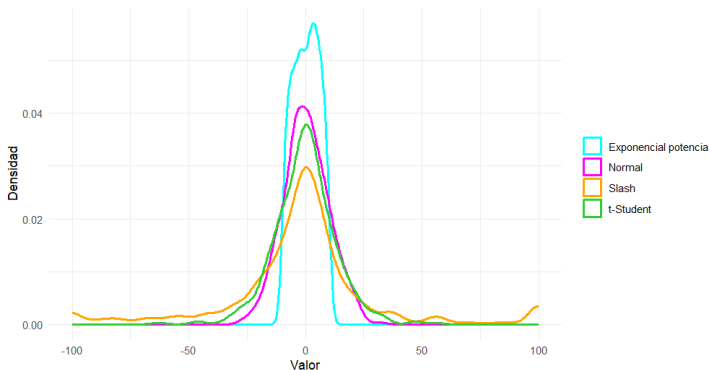

Figure 2: Comparativa densidad distribuciones elípticas. Fuente: Elaboración propia.

Lliefors

$$D_n = \max_{-\infty < x < \infty} \left| F_n(x) - F(x; \hat{\mu}, \hat{\sigma}^2) \right| \tag{1}$$

donde:

- D_n: Estadística de prueba del test de Lliefors.
- $F_n(x)$: La función de distribución empírica (FDE) de la muestra:

$$F_n(x) = \frac{1}{n} \sum_{i=1}^{n} I(X_i \leq x)$$

- $F(x; \hat{\mu}, \hat{\sigma}^2)$: La función de distribución normal con media $\hat{\mu}$ y varianza $\hat{\sigma}^2$:

$$F(x; \hat{\mu}, \hat{\sigma}^2) = \Phi\left(\frac{x - \hat{\mu}}{\hat{\sigma}}\right)$$

Estadístico	Valor
Skewness (asimetría)	0.30367
Estadístico Z	1.11600
p-value	0.2644
Hipótesis alternativa	Datos tienen asimetría

Table 1: Test Asimetría de D'Agostino para Besalco. Fuente: Elaboración propia.

Estadístico	Valor
Chi-squared	1.0913
df	2
p-value	0.5795
Hipótesis alternativa	Datos no provienen de una normal

Table 2: Test de Jarque-Bera para Besalco. Fuente: Elaboración propia.

Las siguientes figuras corresponden a gráficos de los retornos mensuales de Besalco basados en **precios de cierre diarios ajustados**.
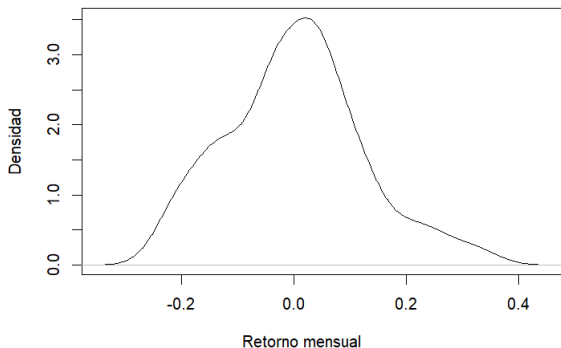

Figure 3: Densidad retornos Besalco (2018-2023). Fuente: Elaboración propia.

Estadístico	Valor
Mínimo	-0.230746559
Máximo	0.334786499
Rango	0.565533059
Mediana	0.007561071
Media	0.002731092
Error estándar de la media	0.014518750
IC media (95%)	0.028956733
varianza	0.014966381
Desviación estándar	0.122337160
Coeficiente de variación	44.794235570
Asimetría	0.297276866
Curtosis	-0.078276872
Shapiro-Wilk W	0.980553143
Valor p Shapiro-Wilk	0.338553548

Table 3: Estadísticos descriptivos retornos Besalco. Fuente: Elaboración propia

Limited Demand: Only 33% of households apply for loans from an MFI at the end of a three-year study.

Business Impact: Although some borrowers expand businesses, they do not escape poverty through microfinance.

General Welfare: There is no increase in the monthly consumption of those who accessed microfinance, either in the short or long term.

Business Benefits: Most companies do not see an increase in profits, although there are improvements in companies with high profitability.

Effect on Social Outcomes: In Hyderabad, access to microcredit shows no effect on education, health or women's empowerment in the short term, and no long-term impact on empowerment or other social outcomes.

Small Enterprises: Most of the enterprises in the target group are small, with almost none employing others, and are unprofitable and difficult to scale in a high-growth context.

Consumption Structure: Microcredit changes the consumption structure; households invest in durable goods and limit spending on tempting goods and celebrations.

Dedicated Labor: Households with access to loans work more on their businesses, sometimes reducing effort in other areas. Microcredit acts as an important financial product in contexts with limited access to credit and savings.

Overestimation of Potential: Microcredit enthusiasts may have overestimated the potential of the enterprises to generate income and empower women owners..

Thank you very much for your attention

Normal p – variada: $N_p(\mu, \Omega)$.

$$f_x(x) = 2\pi^{-\frac{p}{2}} |\Omega|^{-\frac{1}{2}} \; exp \; \{-\frac{1}{2}(x - \mu)^T \Omega^{-1}(x - \mu)\}. \tag{2}$$

T de Student p – variada con ν grados de libertad: $t_p(\mu, \Omega, \nu)$.

$$f_x(x) = \frac{\Gamma[\frac{1}{2}(\nu + p)]}{\Gamma[\frac{\nu}{2}(\nu\pi)^{\frac{p}{2}}]} |\Omega|^{-\frac{1}{2}} \{1 + \frac{1}{\nu}(x - \mu)^T \Omega^{-1}(x - \mu)\}^{-\frac{1}{2}(\nu + p)}. \tag{3}$$

[?]

📄 Banerjee, A., Duflo, E., Glennerster, R., y Kinnan, C. (2015).
The miracle of microfinance? evidence from a randomized evaluation.
American Economic Journal: Applied Economics, 7(1):22–53.