

# The financial sustainability of Microcredit in Portugal

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**Abstract:** Microcredit and microfinance emerged in the 1970's in Bangladesh and other developing countries and expanded rapidly worldwide as a business model financially sustainable and able to fight poverty and social exclusion. Empirical evidence confirms microcredit ability to mitigate poverty but its financial sustainability is controversial. Using 2006-2009 Portuguese micro-level data, we estimate the failure rate of Portuguese micro-credit projects as 20,6%/year that, to be financially sustainable, would require a real interest rate by 25%/year. Using a territorial variable on a discrete Cox proportional hazard model with censored data, we estimate that the failure rate of those micro-credit projects located in the worst-case NUTS II Portuguese regions (Alentejo and Centro) and promoted by lower schooling people is significantly higher than best-case.

**Keywords:** Microcredit, Firms failure rate, Poverty, Financial sustainability

**JEL Codes:** C31, G21, R58

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## 1. Introduction

In developing countries, a considerable percentage of the population is poor and do not have access to financial services, *e.g.*, credit and insurance services, because poor people small scale operations do not compensate for standard financial institutions administration costs.

Yunus' microcredit concept become better known in the 1970s as a business model based on low administrative costs intended to turn into a profitable business the poor people banking niche market. Although idealised as a profitable business, it is primary designed to help poverty alleviation. Starting in 1974-1976 as an experiment, Grameen Bank - Bangladesh was founded on 1983 by Muhammad Yunus based on this philosophy and it is stated to be financially sustainable: for 2009, Grameen Bank attributed 1151M\$USD on new loans to poor people (and a cumulated total of 8742M\$USD) and gathered 649M\$USD in new deposits from those poor people. On average, the credit to each borrower amounts for 1360\$USD and Grameen Bank has, on average for the 2000 decade, a return on actives, ROA, of 0.14%/year (Grameen, 2010). The announced financial sustainability is questionable due to inappropriate failure-to-pay assessment procedures (Morduch, 1999; Pearl and Phillips, 2001).

Another very important institution is BRAC - Bangladesh Rural Advancement Committee - that was founded on 1972 by Fazle Hasan Abed, and that, since 1974, provides microcredit to poor people. In 2009, BRAC attributed 822M\$USD on new loans to poor people (and a cumulated total of 5914M\$USD) and gathered 275M\$USD in new deposits from poor people. On average, the credit to each borrower amounts for 996\$USD and BRAC states that in the first decade of 2000 it has a 23.5% deficit, (BRAC, 2010).

Due to its positive impact on poverty reduction (Zeller *et al.*, 2001) especially on females (Pitt and Khandker, 1998) and on those people closer to the poverty line (Mosley and Hulme, 1998), over the last decade microcredit expanded worldwide (see Table 1 and Table 2) gaining considerable supporters in developed countries (*e.g.*, Gates Foundation, n.d.). Nonetheless, microcredit's positive results seem to encompass just a short-term redistribution effect from sponsors to defective credit receptor (Morduch, 1999). A long-term positive effect on poverty alleviation on, at least, a regional basis, would require microcredit institutions to be financially sustainable: *i.e.*, charged real interest rates must incorporate the default probability of financed projects. With projects failure rate by 25%/year, interest rate should be 30%/year that is much higher than the average of 17%/year charged (Morduch, 1999). Other sources confirm this finding (see, Table1, where Profit Margin is negative in all regions).

Although microcredit increasing, the total loans in table 1 of 45500M\$USD are microscopic comparing them with commercial banks' assets, *e.g.*, Bank of America alone, the USA major bank, accounts for 2268347M\$USD in total assets (NIC, 2010).

With the objective of evaluating the long-term Portuguese microcredit program financial sustainability, in this paper we evaluate the financed projects failure rate and compare the on-lending interest rates (between EURIBOR 3M plus 2 p.p. or 3 p.p.) with the real interest rate that would be necessary to have a financially sustainable microcredit system.

Another question, not considered in this paper, is to assume that microcredit is a redistribution program and, on a euro basis, compare its efficiency on poverty reduction and employment encouragement to other

redistribution programs (e.g., mensal social payments that, in Portugal for 2009 year, amounts to 507.75M€, OE, 2010). That question would require to enquiry

promoters of financed projects, both successes and failures.

**Table 1 –Microfinance in Europe (2009)**

Country	Projects	Country	Projects	Country	Projects	Country	Projects	Country	Projects
Portugal	454	UK	880	Finland	3194	Germany	8205	France	28863
Belgium	835	Italy	1909	Romania	3493	Hungary	10402		
Sweden	864	Bulgaria	2637	Spain	5172	Poland	16655		

Source: Jayo et al. (2010)

**Table 2 – 2009 Microfinance Institutions in Developing Regions**

Region	Av.Age	Offices	Personnel	Dep.s	Loans	L/B	Real IR	Profit Margin
Sub-Saharan Africa	12,3	5519	50833	5068,0	4439,9	738	-1,98%	-36,2%
South & East Asia	17,0	29033	252554	3949,6	13070,9	382	0,53%	-9,1%
East Eur & Central Asia	9,1	3397	41312	4693,5	7340,3	3317	2,65%	-1,4%
Latin Amer & the Carib	15,5	7392	109893	12864,3	19518,8	1636	0,80%	-3,5%
Mid East & N Africa	11,4	2047	19204	134,1	1168,3	906	-0,15%	-1,2%

Source: MIX (2010), Age in years; Deposits, and Loans in M\$USD; L/B-Loan per borrower in \$USD

## 2. Microcredit in Portugal

Microcredit was introduced in Portugal on December 1998 when the ANDC (*Associação Nacional de Direito ao Crédito*) was created, an NGO whose mission focuses on social inclusion and fighting poverty. Microcredit programme started operating based on a partnership between ANDC, the IEFP - the public department for the promotion of employment (*Instituto Emprego e Formação Profissional*) and the Millennium BCP (a commercial bank). Since 2005 other programmes emerged as partnerships between NGOs and commercial banks.

As a pioneering institution, ANDC database is the most valuable one existing in Portugal. We contacted the other Portuguese promoters of microcredit in order to obtain other with no results.

For the 2006-2009 period, this database covers 678 financed projects with a total of 3.78M€. We use just the 2006-2009 period because data collecting procedure and access condition to microcredit in the priors 449 financed projects, 3.39M€, were dissimilar to that used in a more recent period. From those 678 projects, 26 were excluded due to identified data inconsistencies and missed values.

During this 4-year-period, financed projects increased 24%/year, including equally men and women, with 3/4 financed person age between 25 and 50 years and corresponding to a self-employment project. In 4/5 of financed projects the economic activity is in the service sector. From the financed 652 projects considered, at the end of 2009 there were 446 active ones.

Due to data limitations (the date field refers to the year), we estimated a time discrete Cox hazard model with

censored data (Cox, 1972; Cox and Oakes, 1984) resulting in the financed projects probability of failure function during the period t conditional on independent variables, X:

$$h(t|X_{t-1}) = e^{\lambda t} e^{\beta X_{t-1}}, t = 1, 2, 3, 4 \quad (1)$$

We used as model's variables, on a regional NUTS III base, the population density (People/Km<sup>2</sup>), the Gross Value Added variation at current prices (GVA). On promoters characteristics we use their schooling, age and nationality. We also control for the project's sector of activity.

Using the covered 652 financed projects, we estimated the model (1) from which we present in table 2 the significant variables.

In table 1, on regional basis, we see that those projects located in regions with higher population density and economically more dynamic have a higher failure risk. This result is counter-intuitive but it derives from the existence of more job opportunities that induce promoters to abandon the financed self-employment project. Failure risk of those projects located in the two most underdeveloped Portuguese regions (Alentejo and Centro) is significantly higher than that on the best-case scenario (Norte).

The parameter associated with the Population Density, on a Portuguese regional basis, must be read with caution as it includes the influence of other variables as it is highly correlated with the GDP per capita ( $\rho = 0.743$ ) and the territorial density of firms ( $\rho = 0.995$ ).

**Table 1 – Failure probability significant determinants ( $\alpha = 10\%$ )**

	$\hat{\beta}$	St. Error	Wald	Deg.freed.	Prob( $\beta$ ) = 0	Exp( $\hat{\beta}$ )
Pop. Density	0,001	0,000	8,239	1	0,004	1,001
GVA	0,019	0,011	2,836	1	0,092	1,020
> 12 years schooling			7,779	3	0,051	
< 12 years schooling	0,513	0,298	2,953	1	0,086	1,670
< 9 years schooling	0,765	0,290	6,976	1	0,008	2,149
< 4 years schooling	0,613	0,341	3,224	1	0,073	1,845
Alentejo Region	0,618	0,329	3,529	1	0,060	1,855
Centro Region	0,500	0,267	3,496	1	0,062	1,648

On schooling basis, those projects promoted by people with lower schooling level have a higher risk failure.

On average terms, assuming regular entrance and failure of the projects during the year (10.00/month in 2006; 11.50/month in 2007; 16.65/month in 2008; and 18.08/month in 2009) the financed projects failure rate is estimated as 20,63%/year. This figure is compatible with Morduch's (1999) computed failure rate in developing countries.

Assuming that on those failed projects the financial institution recovers 20% of the financed capital (CGD, n.d.) for this 20.63%/year failure probability, a long-term sustainable financial system would require a 20%/year real interest rate that is much higher than those interest rates in practice (nominal rate = EURIBOR 3M + 2 p.p. or 3 p.p.). For a non-risk real interest rate of 3%/year, a financially sustainable system would require 23.4%/year:

$$1. (1 + i). (1 - 20.63\%) + 0.2. (1 + i). 20.63\% = 1 + 3\%$$

$$i = \frac{1 + 3\%}{1 - 20.63\% + 0.2 \times 20.63\%} - 1 = 23.4\% \quad (2)$$

For a 10000€, 60 months credit, that 23.4%/year interest rate would require a payment of 283€/month while 3.5%/year requires 182€/month.

Notice that we do not have direct data on the percentage of the principal that banks recover when a microcredit project fails. We assume CGD's collateral percentage (20%) as that recovery percentage. To us it seems a

reasonable estimative as the use of intensive collecting procedures does not seem ethical when a project intended to alleviate poverty fails.

### Conclusions

In developed countries microcredit concept appears in 1970s to help poverty alleviation. Although its positive impact on poverty reduction, especially on females, and on those people closer to the poverty line, it seem to encompass just a short-term redistribution effect from sponsors to defective credit receptor (Morduch, 1999). A long-term positive effect on poverty alleviation would require that microcredit institutions were financially sustainable.

With the objective of evaluating the long-term Portuguese microcredit program financial sustainability, in this paper we evaluate the financed projects failure rate as 20.63%/year. That figure would imply that a financially sustainable system charges a 23.4%/year real interest rate that is much higher than those actually charged (nominal rate = EURIBOR 3M + 2 p.p. or 3p.p.).

We also estimated that those projects located in regions with higher population density and economically more dynamic have a higher failure risk. This result is counter-intuitive but it derives from the existence of more job opportunities that induce promoters to abandon the financed self-employment project.

### References

- BRAC(2010), BRAC at a Glance, <http://www.brac.net/content/stay-informed-key-statistics>, 25 Feb 2011.
- CGD (n.d.), Microcrédito - Linha Protocolada entre a CGD e a Associação Nacional de Direito ao Crédito (ANDC), <http://www.cgd.pt/institucional/banco-social/Microcredito/Pages/Microcredito-ANDC.aspx>, 25 Feb 2011.
- Cox, D. R. and D. Oakes (1984), *Analysis of Survival Data*, Chapman and Hall: London.

- Cox, D. R. (1972), "Regression Models and Life-Tables", *Journal of the Royal Statistical Society - Series B*, 34, 187:220.
- Gates foundation, Bill and Melinda (s.d.), Financial services for the poor - Fact sheet, <http://www.gatesfoundation.org/financialservicesforthe-poor/Documents/financial-services-for-the-poor-fact-sheet.pdf>, 21/02/2011.
- Grameen (2010), Grameen Bank Historical Data Series 1976-2009 (Amount in Million USD), [http://www.grameen-info.org/index.php?option=com\\_content&task=view&id=177&Itemid=432](http://www.grameen-info.org/index.php?option=com_content&task=view&id=177&Itemid=432), 25 Feb 2011.

- Jayo, B., A. González e C. Conzett (2010), "Overview of the Microcredit Sector in the European Union 2008-2009", *EMN Working Papers*, 6.
- MIX (2010), "2009 MFI Benchmarks", *MIX Microfinance World*, <http://www.themix.org/publications/mix-microfinance-world/2010/10/2009-mfi-benchmarks>, 26 Feb 2011.
- Morduch, J. 1999. "The Microfinance Promise". *Journal of Economic Literature*, 37, 1569-1614.
- NIC, National Information Center (2010), Top 50 BHCs <http://www.ffiec.gov/nicpubweb/nicweb/top50form.aspx>, 18 March 2011.
- OE2010 (2010), *Orçamento de Estado para 2010*, Ministério das Finanças e da Administração Pública: Portugal. <http://www.dgo.pt/oe/2010/Proposta/Relatorio/rel-2010.pdf>, 26 Feb 2011.
- Pearl, D. and M. M. Phillips (2001) "Grameen Bank, Which Pioneered Loans For the Poor, Has Hit a Repayment Snag", *The Wall Street Journal Online*, <http://online.wsj.com/public/resources/documents/pearl112701.htm>, 25 Feb 2011.
- Pitt, M. and S. Khandker (1998), "The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter", *Journal of Political Economy*, 106, 958:996.