



## Modeling Funding Dynamics in the U.S. Microlending Sector: An Empirical Analysis of Types of Business and Investment Amounts

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### **Abstract**

Microlending market in the United States faces structural challenges that differ it with the microfinance situation in other parts of the world, such as a relatively small pool of microenterprises, high operation costs, and the existence of strict regulation, which hinders institutional achievement and investor returns. Such circumstances make it difficult to ensure the sustainability and effectiveness of community development funds, and it is critical to understand the differences in the flow of funding in different types of investments and capital distributions. This study examines how the volume of funding activity affects the volume of QLICI investments and QALICB business categories, namely Real Estate (RE) and Non-Real Estate (NRE) to identify general trends in federal behavior regarding community development investment. The study applies a quantitative research design based on secondary data, which is gathered by the U.S. Department of the Treasury (2001-2022), and is supported by cross-study checks and series validity tests, as well as the inclusion of peer-reviewed materials. The data was analyzed in Stata 17.0, with an ordinary least squares (OLS) regression model to determine the way that QLICI Amount and QALICB Type moderate the number of funding per year. The post-estimation tests such as an Actual vs Predicted Funding plot gave information on the accuracy of models and linearity of the observed associations. The results provide systematic knowledge on the way investment size and sector typology shape federal funding patterns, which boosts the evaluation of community development financing and makes policy choices to strengthen investment equity and program effectiveness.

**Keywords:** *Microlending; Funding Patterns; QLICI Investments; OLS Regression; Real Estate vs. Non-Real Estate (QALICB Types); Community Development Finance*

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### **Introduction**

Microlending has become a unique product that bridges the gap between traditional investment vehicles and alternative forms of investment in the sense of providing a set of financial returns and social impact that is attractive to a growing number of socially responsible investors. However, despite its

international visibility, microlending in the United States is faced with institutional barriers such as a relatively small microenterprise industry, regulatory factors, and high operational expenses which together limit institutional survival and access by borrowers (Schreiner, 2001). The microlending market in the U.S. is facing uniquely different threats, such as relatively low base of microenterprises, high costs of operations, and highly restrictive regulatory barriers, which affect market dynamics and investor performance (Servon, 2012). At the same time, empirical evidence shows that microfinance institutions (MFIs) can produce competitive financial results. A comparison of microcredit to traditional U.S. dollar-denominated investments has found that microloans outperform the corporate bonds at the rate of 1.79 per cent/annum with profitability performance caused by MFI-specific attributes, and not by the macro economy (Koivulehto, 2007).

Other indicators based on marketplace lending in the United States highlight strong risk-adjusted returns, estimated around 40 basis points per month, and a high volatility loss through portfolio diversification (Kraussl, 2021). This evidence suggests that microlending would be able to compete on purely financial grounds with traditional markets like equities, bonds, and mutual funds, despite its significantly different accessibility and risk-taking character. In addition to the quantitative evaluation of returns, the effectiveness of micro-lending is often evaluated against its social input. The industry has been a key player in reducing poverty, empowering women, and community-level development by providing credit, savings services, and insurance to underserved populations, as supported by a large amount of scholarly literature. Nevertheless, these social outcomes are hard to measure. Social Return on Investment (SROI) models have been criticized as putting symbolic legitimacy ahead of empirically based assessments of client impact. The lack of standardized benchmarks, the existence of selection bias, and inadequacy of the data available when estimating the social impact of micro-finance institutions (MFIs) make them less comparable to the more easily manageable financial metrics that are used in traditional analysis of investments.

Despite these shortcomings, microlending still has a draw to investors not only motivated by its possible returns but also a wish to create positive social change and bring about inclusive economic growth. This is as opposed to the traditional investments that have usually based motivations of investors on wealth accumulation, market stability and long-term capital gains. In addition, microlending is more accessibility characterized, and this is what sets it apart against the traditional financial markets. Unlike traditional investment systems, which often require more financial literacy, minimum capital requirements, and the services of regulated brokerage systems, fintech innovations, including Kiva, Prosper, and LendingClub, have democratized investment, by reducing the barriers to participation as well as allowing individuals to invest in micro-loans at low entry costs.

At the same time, microlending is associated with its own risks, including default on borrowing, insurability, and exposure to economic fluctuations, which equities and bonds are determined by market volatility, inflation, and interest rate changes. The two realms are also subjects of the ethical debate: the possibility of falling into debt traps and the exploitation of borrowers by microlending can be evaluated against the development of ESG and socially responsible investment systems into the mainstream market. These ambiguities highlight the need to conduct a detailed comparative study of microlending and conventional investments including not only financial results, but also social benefits, motivation of the investors, ease of access, and methodology limitations. The article discusses the comparison of microlending to conventional investment vehicles in the financial, social, and ethical aspects with special emphasis to income inequities, difference in government funding and investor expectations.

The combination of the results of previous empirical research and the emphasis on the impossibility of measurement of social outcomes inherent to the analysis of microlending makes the study an organized structure of cognitions about the role of microlending in the overall investment type.

## **Literature Review**

According to a study of microlending in the United States, the microlending sector faces challenges that were explained by the fact that the sector had a relatively small base of microenterprises, and high entry barriers. As a result, microlending projects are facing a lot of challenges. Besides highlighting the need to conduct strict cost-effectiveness studies and create saving systems among the unbanked population, the results show that the level of demand is limited and expenses are exaggerated, which complicates achieving financial self-sufficiency and becomes a significant barrier to the sustainability of small business operations in the country. This cost recovery is more promising in the case of low-cost savings services (Schreiner, 2001; Servon, 2006; Bhatt & Tang, 2001). The performance of microcredit in comparison to U.S dollar-denominated corporate bonds showed an annual growth of 1.79 per cent. Despite the variability in the profitability of microfinance institutions (MFIs), empirical evidence suggests that the returns are very highly influenced by the institution-specific features which in turn make microloans competitive to other traditional investments in formal financial markets. During the observation period, the average profitability of MFIs improved. The environment seems not to have significant effects on profitability as compared to institution-specific traits (Koivulehto, 2007; Muriu, n.d.; Imai et al., 2012).

Additionally, another study in the U.S. found that MFIs with marketplace lending portfolios show high risk-adjusted returns of 40 basis points per month, with an average monthly volatility standing at 0.36. Returns from diversification are also high as sophisticated investors can smooth volatility of exposure to a single loan through diversified portfolios of loan. (Kräussl et al., 2021). A study found the effects of microlending on social aspects such as poverty alleviation, women's empowerment, and community development by emphasizing the manner through which the microfinance institutions (MFIs) offer accessibility of funds through microloans, savings facilities, and insurance and empower marginalized citizens to venture into business activities. These activities lead to enhanced household earnings and social development at the community level. Nevertheless, it also incorporates issues of high-interest charges and debt overload as issues affecting the outcomes (Kar & Swain, 2014; Campbell & Rogers, 2012).

Alternatively, a study found ways to measure the impact and the qualitative data into quantitative measures. The study criticizes social accounting's use of Social Return on Investment (SROI) through an assessment of applying it in the context of microfinance with the conclusion that it has more about symbolic legitimacy rather than a causative approach to measuring social impact because customer impact accurately cannot be determined and because of benchmark indicators used with bias. Additionally, it found Microfinance institutions cannot credibly quantify their impact on their clients with sophisticated methods and that Self- and microfinance institution selection biases render invalid the use of national benchmarking indicators or control groups. Furthermore, SROI needs at all costs to be conceived as a form of asserting symbolic legitimacy rather than a solid approach to demonstrating social effects or an instrument of investors and managers (Vik, 2017).

Aside from measuring impact, another study found the contrast between the social aspect of traditional investing vs microfinance/microlending. Microfinance appeals to socially conscious investors looking at both the social and financial returns while traditional investment looks at pure returns on investment. The article presents the impact of foreign capital investment in microfinance as a positive one and attributes socially responsible investors with achieving a balance of social and financial returns and driving the growth of microfinance further into more financially excluded. Additionally, the study states microfinance needs a deeper capital market to grow and reach a greater number of financially excluded individuals, and it has become almost universal practice with socially conscious investors driven as much by social as economic interests. Microfinance attracts socially responsible investors because it has social and financial returns as a goal (Reille & Forster, 2008). According to a study, the subsidized investment

under the New Markets Tax Credit program has moderate positive impacts on the neighborhood conditions thus implying that such investments can impact growth. However, this could be due to changes in the composition of residents instead of the well-being of the existing residents (Freedman, 2012).

Funding influences growth and sustainability, as it fulfills the capital gap in the troubled regions, thus allowing the businesses to obtain required resources. Nonetheless, the lack of deal flow and management talent hinder performance, and new compensation and active management are required to bring in qualified employees (Martinez, 2000). Funding has also impact on growth and sustainability of Qualified Low-Income Community Investments by providing the necessary equity capital that enhances creditworthiness, and access to debt financing, hence creating employment and revitalizing the low-income community economies (Rubin, 2001). The article highlights that financial accessibility is critical to the success of Qualified Active Low-Income Community Businesses (QALICBs), where the funding gap is reduced through innovative methods of finance funding, including microfinance and impact investment, thus facilitating the inclusive development and community empowerment (Rahmadi and Rozamuri, 2024).

To receive NMTC funding, Qualified Active Low-Income Community Businesses must have at least half of their income derived within low-income neighborhoods, which is a critical aspect when it comes to accessing capital that helps them to grow and develop in undervalued districts (Rajabi, 2017). The paper also highlights the fact that Qualified Active Low-Income Community Businesses cannot flourish without access to funding since this factor allows them to succeed and add to the wellbeing of the local community. However, its entry to the required financial resources is often limited due to systematic issues (Suarlin, 2023).

## **Methodology**

### **Research Design**

This paper uses a quantitative research design to examine the effect of funding on QLICI (Qualified Low-Income Community Investment) Amount and QALICB (Qualified Active Low-Income Community Business) type, i.e. RE (Real Estate) and NRE (Non-Real Estate).

### **Data Sources**

The research was based on secondary information that was obtained through the U.S. Department of the Treasury from 2001 to 2022. To enhance the validity and reliability of the information extracted the study used cross-study validation, consistency tests, and use of peer-reviewed sources hence working similarly to expert review in research instrument validation.

### **Model Specification**

Data analysis was conducted using Stata 17.0, employing an ordinary least squares (OLS) regression model to examine the relationship between Funding count by year with QLICI Amount and QALICB Type. The regression approach that was adopted helped in estimating coefficient significance, effect sizes, and general model fit depending on the variables included in the dataset. Post-estimation processes were then done to evaluate predictive capabilities of the model including the use of graphical diagnostics such as an Actual versus Predicted Funding plot. The comparison of the visualization of the observed funding values with the model-predicted values provided an indication of the model accuracy, linearity and misfit areas. Together, the regression result and the predictive graphs provided a clear and methodical understanding of how the amount of investment, and the type of investment affects the pattern of funding.

## Analysis

An OLS regression model was used to estimate the factors that influence annual funding patterns, with QLICI amount and QALICB type as key predictors. Below are the results of this analysis.

Table 1

### OLS Regression

Source	SS	df		Number of obs=	19,907
Model	<b>305146.321</b>	<b>2</b>	<b>152573.161</b>	F(2, 19904) =	<b>640.44</b>
Residual	<b>4741767.58</b>	<b>19,904</b>	<b>238.231892</b>	Prob > F =	<b>0.0000</b>
Total	<b>5046913.9</b>	<b>19,906</b>	<b>253.537321</b>	R-squared =	<b>0.0605</b>
				Adj R-squared=	<b>0.0604</b>
				Root MSE =	<b>15.435</b>

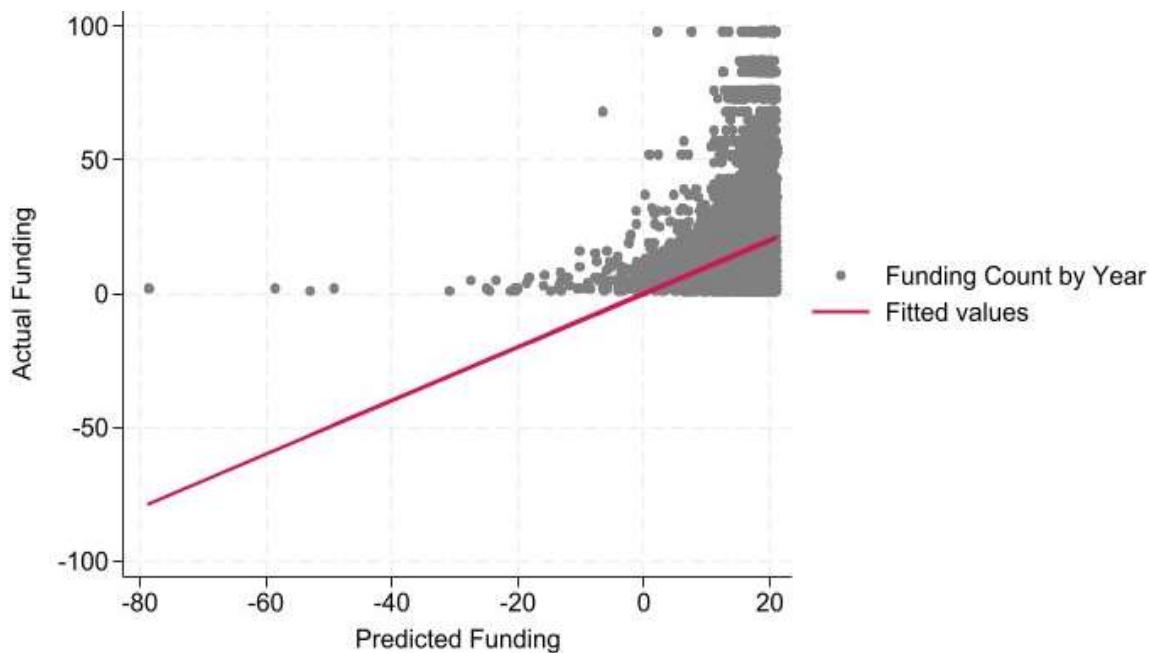
FundingCount~r	Coefficient	Std. err.	P> t	[95% conf. interval]
QLICIAmount	<b>-9.84e-07</b>	<b>2.93e-08</b>	<b>-33.63</b>	<b>0.000</b> <b>-1.04e-06</b> <b>-9.27e-07</b>
QALICBType_num	<b>-1.595191</b>	<b>.1389831</b>	<b>-11.48</b>	<b>0.000</b> <b>-1.867609</b> <b>-1.322773</b>
_cons	<b>22.56384</b>	<b>.285749</b>	<b>78.96</b>	<b>0.000</b> <b>22.00374</b> <b>23.12393</b>

The findings of an ordinary least squares regression to estimate the determinants of 'Funding Countby Year' are given in Table 1. The model comprises of two predictors i.e. the amount of the investment which is in the form of a continuous measure named QLICIA mount and the other predictor is the type of qualifying business which is in the form of a categorical measure referred to as QALICBType\_num. The overall statistical significance of the model is ( $F(2, 19,904) = 640.44$ ,  $p = 0.001$ ) and the overall R square is 0.0605 that accounts for variation of annual funding (approximately 6.05 \$). The age coefficient on QLICIAmount is negative and it is significant ( $b = -9.84 \times 10^{-7}$ ,  $p = .001$ ). This implies that given the business type, the higher the increase in the amount of investment in the QLICI, the smaller the number of fundings per year as the increase in funds invested. The fact that the coefficient is quite small, as it should be so, since the amounts of investments are quite large, the outcome indicates one inversely dependent relationship between the size of investments and the rate of funding distributions.

Equally, there is a negative relationship between the two variables, namely, QALICB Type\_num and Funding Countby Year ( $b = -1.595$ ,  $p < 0.001$ ). It means that there are groups of qualifying businesses that will get much less funding allocation per year than the reference group. The effect size is significantly large: a change in the business category of the baseline to the other category decreases the number of counts anticipated to be funded on average, other factors being equal, by about 1.6. The constant term is also important ( $b = 22.56$ ,  $p < 0.001$ ), meaning that the average number of funding would take approximately of 22.56 when the value of both, QLICIAmount and QALICBType\_num is zero (i.e. at their reference value). Generally, the model shows that the amount of investment and the type of business are also important predictors of the number of annual funding activity, and both variables have negative correlations to the number of funding activities. These findings underscore the significance of organizational features and patterns of capital allocation to affect the frequency of funding among the data.

Figure 1

## Actual vs Predicted Funding



Source: Made by the Author

The above figure shows how Funding Count by Year is related to the empirically determined funding counts as predicted by the model. The scatterplot suggests that the data are strongly nonlinear and heteroskedastic; the counts of observed funding reach the positive values with a strong concentration, and the model provides a broad range of the predicted counts, with many negative predictions as well. The trend indicates the constraints of the linear specification used in the regression model. The regression line that was fitted, in pink, has an upward slope and this may mean that as we increase the predicted values, the observed values tend to increase on average. However, the difference between the actual and predicted values is also noticeable in a large part of the distribution. In particular, the range of observed funding counts always starts at 0, but the model estimates as many as -80, therefore, pointing to the incompatibility between the model assumptions and the empirical distribution of the dependent variable.

Besides, the scatterplot displays a strong right-skew of the observed data: most of the observations fall within the range of 0 to 50 funding events, and there is a strong concentration of the points to the positive values. The linear model does not represent this curvature and instead projects a straight-line relationship, which does not represent the high values properly and rather overestimates the low values. This graphical illustration highlights heteroskedasticity of the residual variance and casts doubt on whether linear functional form is an appropriate way to model the counts of funding. Combined, the figure shows that, though statistically significant coefficients are found using the linear model, its predictive accuracy is limited, especially at extreme levels of the predictor variables.

## Conclusion

The current research aimed to explore the connection between the level of funding and the amount of QLICI and type of QALICB in the United States wherein a major objective was to explain ways in which functional allocation of funds affects community development funding patterns. It was found that the level of investment and the QALICB category which separates both real estate and non-real estate investments have a significant impact on the allocation of funds annually, thus forming a larger sectoral pattern in community development financing. These results have great implications for policymakers, regulators, and practitioners in the area of community development. More specifically, they point to the fact that more efficient allocation mechanisms, improved institutional support frameworks, and improved measurement systems that would be able to capture financial and social effects are needed. In the broader framework of income disparity, differences in government provision, and the behavioral economics of community investment, the findings supplement the existing literature that emphasizes a structural constraint of microlending markets in the US. To this end, policymakers are suggested to increase the flexibility of regulations, expand capital availability to microenterprises, and invest in more resilient impact-evaluation systems that will boost the effectiveness of both financial and social performance of microlending programs. Although the study provides useful information, its findings are limited using secondary data and the diversity of the methodological frameworks underlying the study, which may restrict the ability to extrapolate the findings. Further studies are required on how governmental investment can be nonlinearly related to income differences, the threshold phenomena in community investment behavior, and more detailed borrower-level data that can be used to build upon the current contributions of the study.

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