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Crowdfunding: The collaborative economy for channelling institutional and household savings

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ABSTRACT

The financial disintermediation mechanism known as "loan-based-crowdfunding" has recently come under regulation in several countries. This competitive investment and finance vehicle is already well established in the US and British markets.

By compiling empirical data from a reference crowdfunding platform, this article compares loan-based crowdfunding with traditional investment vehicles such as investment funds, equities or pension funds.

The conclusion of the study is that saving through crowdfunding allows the optimization of a portfolio comprising both institutional and retail investors.

1. Introduction

The financial markets have developed rapidly since the second half of the twentieth century. The increasing availability of information via the new technologies has resulted in a vast range of new forms of mortgages and of consumer credit, futures, options, swaps and other risk management vehicles, new forms of health insurance, and innovative ways of making development loans (Shiller, 2009).

However, financial markets present inefficiencies. Several of the innovative products mentioned above, for example, are beyond the reach of small and medium enterprises (SMEs) and households, and investment and finance alternatives for relatively small portfolios or small turnover companies are limited.

Moreover, these market inefficiencies are increased by an environment characterised by low interest rates, the strong negotiating power of financial suppliers with respect to SMEs and small investors because of the low number of organisations with systemic risk, and a European financial market that is highly dependent on its banking institutions (Giralt and González, 2012). While banks in the US account for only 19% of long term financing, in the European Union the corresponding figure is 81% (Cummings, 2013).

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Several studies agree that well-functioning financial intermediaries have a significant impact on economic growth and that there is a positive correlation between economic growth and finance (Bonin and Wachtel, 2003; Goldsmith, 1969; King and Levine, 1993). As a result, the search for alternative financial suppliers in Europe is now underway (Roig Hernando and Soriano Llobera, 2015).

Measures such as the Bank of Spain's regulation of the upper limits of deposit interest rates in order to reduce the "war for deposits" are justified by the alleged risk to the finance industry, but they may result in other market interferences which mainly affect small investors (Valverde and Villarroya, 2010). In this context, along with an increase in the financial culture and the spread of information technology, new innovative vehicles are penetrating the market with households and SMEs as their main targets.

An example is the new investment and finance vehicle named loan-based crowdfunding, also known as crowdlending, which has quickly made its mark in the financial markets. In this system, individuals, organisations and businesses can raise money to finance their activities through online portals named crowdfunding platforms (Financial Conduct Authority, 2014).

Loan-based crowdfunding is being consolidated in the Anglo-Saxon countries with more than $4 billion channelized through platforms and penetrating the Spanish market with potential of becoming a part of the solution of the financial market inefficiencies and an efficient risk-return asset for investors who are interested in diversify their portfolio. On the other hand, considering it is a new capital market product and, according to the World Economic Forum (2016), an innovation that would have a greater impact on the financial markets, little research has been done on crowdlending and, even more, from an investment perspective.

Given the potential of loan-based crowdfunding to become part of the solution to the problems faced by small investors, highlighting the scarcity of investment products, and to increase the democratisation of the financial markets, here we evaluate its impact on a savings portfolio.

2. Methodology

First, the following mathematical expression is used to determine the risk of the crowdlending investment product:

$$Risk = \sigma^2 = \frac{\left[\sum_1^c \left(R_p - E(R_p)\right)^2\right]}{n} \tag{1}$$

Where σrepresents the standard deviation, R_p the loan profitability. $E(R_{p)}$ the expected return of historical loans and n the number of historical loans.

Second, the following expression is applied to establish the risk of a loan-based crowdfunding portfolio. Bear in mind that it does not include systemic risk and that it hypothesises that there will be no correlation between the risk of default among SMEs due to their heterogeneity, since the companies are located in different regions and belong to clearly differentiated industries:

$$Portfolio\_risk = \sigma^2_{Port} = \sum_1^p \left(\left(\frac{InvP}{InvTotal} \right)^2 \times \sigma_p^2 \right) \tag{2}$$

Where P corresponds to a particular loan, Port corresponds to the loan-based portfolio of any given investor, InvP to the amount invested in a particular loan, InvTotal to the total amount invested in crowdlending by a particular investor and σ_p^2 to the variance of a particular loan.

In addition, in the case that n loans present the same risk, the portfolio risk will be as follows:

$$Portfoliio\_risk = \sigma^2_{Cart} = \frac{\sigma^2}{n} \tag{3}$$

Third, in order to determine the drivers that influence the loan-based crowdfunding return, a multiple linear regression is applied in order to model the relation between the dependent variable (Y), that is, the loan return, several independent variables (*Var)*, and a randomised factor (ε), expressed by the following equation:

$$Y_1\,(Var_i) = \alpha_0 + \alpha \cdot {}_1 Var_1 + \alpha_2 Var_2 + \alpha_3 Var_3 + \alpha_4 Var_4 + \ldots + \alpha_n Var_n + \varepsilon \tag{4}$$

Where Y_1 corresponds to the dependent variable, α_0 corresponds to the intersection or constant factor, α_i measure the relationship between independent variables and the dependent variable and Var_i to the independent variables.

Fourth, compound interest is used to calculate the profitability of the pension funds. Interest is calculated on the initial principal and also on the accumulated interest of a deposit or loan over previous periods.

$$C_f = C_f(1 + r)^n \tag{5}$$

Where C_F corresponds to the capital in the final period, C_I to the start-up capital, r to the interest rate and n to the number of periods.

The expression used to calculate the compound interest rate is the following:

$$r_t = (1 + r)^n - 1 \tag{6}$$