Reports on Economics and Finance, Vol. 5, 2019, no. 1, 71 - 80
HIKARI Ltd, www.m-hikari.com
https://doi.org/10.12988/ref.2019.955

Financial Exclusion from the Perspective of College Students - an Empirical Analysis Based on the Probit Model

Jian Chen[1]

School of Finance, Guangdong University of Foreign Studies; Southern China Institute of Fortune Management Research（IFMR）
510006, Guangzhou, P.R. China

Weibin Lin, Jianxuan Wu, Sixing Lin, Jin Zeng and Jiawei Li

School of Finance, Guangdong University of Foreign Studies
510006, Guangzhou, P.R. China

Abstract

There are serious financial exclusion problems among college students in our China, but not enough attention has been paid to them. For studying the influencing factors of college students' financial exclusion based on existing literature and 507 survey data of college students, the Probit regression model is used to conduct an empirical study on it. The research finds that whether college students are excluded from loans is influenced by five factors: whether they are finance majors, the financial support provided by family, the proportion of their family's financial support in their total income, whether there are family members engaging in the financial industry, and the degree of students' understanding of the financial industry. Whether students are saving exclusion affected by 5 factors: whether students are undergraduates, whether they are

[1] Correspondent author

finance majors, the financial support provided by their family, the proportion of their family's financial support in their total income and students understanding of the financial industry. Through the empirical research conclusion and corresponding policy implications are drawn, reduce the college students' financial exclusion problems and strengthening financial consumer protection for university students.

Keywords: Financial exclusion; College students; Influencing factors; Probit model

1. Introduction

Online lending platforms have emerged in the consumer credit market for college students in the years since the China banking regulatory commission suspended their credit. For expanding consumer groups and improving market competitiveness, online lending platforms on campus have relaxed loan terms and charged excessive risk compensation rates to lenders. Students' inability to repay loans directly leads to extreme events. The over-priced credit product and media reports on the negative impact of online lending discourage most students; Strict entry requirements set by Banks and other institutions have made it difficult for college students to access formal credit products. Therefore, there are prominent financial exclusion problems in the consumer credit market of college students in China. Financial exclusion refers to the phenomenon that some vulnerable groups have difficulty accessing financial products or services and are excluded from the financial system.

At present, Chinese scholars' researches on financial exclusion mainly focus on rural finance, and the problem of financial exclusion faced by college students has not attracted much attention. Therefore, based on the theory of financial exclusion and the development status of Chinese college students' consumer credit market, this paper explores the influencing factors of college students' financial exclusion by establishing Probit regression model, and gives conclusions and suggestions.

The concept of financial exclusion was first put forward in the study of financial geography in 1992.Since the 1990s, financial institutions have continued to segment the market, exploring "safer" markets -- those with power and advantage. The disadvantaged groups led to economic exclusion (Leyshon and Thrift, 1995). Later, James (2005) found that the most consistent and significant influences on financial exclusion were employment status, family income and housing years, followed by marital status, age and education level.

Virtually, China college students are facing seriously prominent financial exclusion problems as well. However, the problem has not attracted enough attention in China.

These research showed that traditional financial institutions' risk aversion behaviors in university student market, excessive risk compensation of the Internet consumer finance platform, and the particularity of student characteristic make it difficult for students to obtain finance products or services from mainstream formal financial institutions However, the above study is based on descriptive analysis, and there is no empirical discussion on the factors affecting college students' financial exclusion. This paper will explore the main influencing factors of financial exclusion in campus consumer credit market through building an empirical model with collecting data. And then propose policy suggestions based on specific situations, which is of great significance to reduce the probability of financial exclusion of college students, further improve financial system services and regulate campus financial market order.

The remainder of this paper is organized as follows. In Section 2, we present the data and methodology used in this study. Section 2.1 describes definition and expressions. Section 2.2 and 2.3 respectively analyzes the various types and describes the establishment of the model. The empirical analysis is reported in Section 3.Section 4 concludes the paper.

2. Data and Methodology

2.1 Definition and expression of financial exclusion

Financial exclusion is manifested in the fact that discriminated groups have the ability to participate in financial activities, but fail to obtain a social exclusion phenomenon of suitable and targeted financial products and financial services. The college student group is the object of financial exclusion in this paper. Among them, the financial exclusion they receive in the college credit market is generally classified as savings exclusion and loan exclusion. According to Kempson's theory(Kempson and Whyley ,1999), this paper will analyze the financial exclusion of college students from the six dimensions including geographical exclusion, evaluative exclusion, conditional exclusion (divided into quantitative exclusion and cost exclusion), price exclusion, marketing exclusion and self-exclusion.

2.2 Analysis on the types of college credit financial exclusion in China

Geographical exclusion refers to the process in which financial institutions have fewer places around the group of college students and the accessibility of financial services is reduced due to geographical environment and distance, which makes it difficult for college students to obtain financial services. Commercial banks believe that it is hard to supervise college students because of their weakness to enforce contract and high-risk default driving force. Therefore, these banks usually make several campuses share a banking outlet, such as the distribution of bank outlets in Guangzhou Higher Education Mega Center.

Marketing exclusion concerns about the process of financial institutions' marketing objectives and strategies designed to isolate college students from financial services. A. Demirgüç-Kunt（2008）research shows that lack of sufficient income is the main obstacle to someone to accessing banking services. However, the college student group is a typical group lacking stable income. As traditional financial institutions for profit, commercial banks have been slowly respond to the rapid changes in the market and neglected the future sustainable financial consumption ability and repayment ability of college students.

Self-exclusion is an active rejection of the group of college students considering whose possibility of applying for financial services is very fresh and vice versa, and then they actively exclude themselves from the financial services in the process. Seeing the 2017 National University Credit Cognitive Survey Report, only 16% of college students have tried to use credit cards.

Quantitative exclusion is a process that the financial institutions allow college students to lend, but the amount provided is less than the satisfying the demand and unable to properly supply the financial services of college students. Khawaja and Din (2006) pointed out that commercial banks exist some restrictions about financial products, like single type, amount sealing, monotonous innovation and many other issues, in addition incompletely meet the actual needs of customers.

Cost exclusion expresses as the explicit and hidden costs that college students pay through the nose for application policies or time in financial institutions, which forces themselves become more difficult to lend and not enjoy the financial services. The commercial bank loan policy is relatively simple, resulting in students with good credits to bear higher loan costs. Furthermore, the setting of the outlets makes the application usually take a morning or an afternoon.

Price exclusion stands for the interest rate of financial products above expected to exceed the solvency of college students, thus excluding them from financial services. Evaluative exclusion points to the establishment of excessive access conditions and credit evaluation policies by financial institutions, which hinders the process of using financial services for college students. In China, the credit record of college students is relatively blank. They can’t undertake the three requirements of low risk, low cost and high profit of commercial banks, due to a shortage of adult thinking and economic independence plus a qualified collateral and sufficient collateral of scarcity.

2.3. Model Setup

Our research object of credit financial exclusion is college students, for they have different consumer behaviors and group characteristics in terms of credit financing exclusion and other social groups; For ensuring the accuracy of data samples, it is necessary to ensure that respondents are College (college, undergraduate) enrolls ordinary full-time college students. According to this standard, this paper has conducted data surveys in universities in Guangdong Province and some parts of the country by means of online interviews, questionnaires, and telephone interviews.

In this paper, 600 questionnaires are distributed in the survey area, and 559 questionnaires are collected. After eliminating the unqualified questionnaires, 507 valid questionnaires are finally confirmed, and the effective rate of the questionnaires is 90.7%. Of the 507 valid samples, 313 are girls and 194 are boys, of which undergraduate institutions accounted for 81.85% and colleges and universities accounted for 18.15%. According to the analysis, 404 college students are subject to different levels of financial exclusion, accounting for 79.68% of the total sample. Judging from the basic characteristics of the respondents , the respondents mainly have no members in the family engaging in the financial industry and they mainly are not economic or finance majors. At the same time, nearly half of the respondents are unclear about the financial institutions. The per capita annual disposable funds of students are around 15,940 yuan, which is at the low income level; parents are the main source of funds for most students. These characteristics are basically consistent with the financial income of college students, and the data samples have strong representation.

In order to ensure the diversity, accuracy and representativeness of the data obtained, this paper finally chooses the gender of college students, the batch of schools, the majors, the family members whether they are engaged in the financial industry, the degree of trust in financial institutions, and the parents' annual financial support, its own annual disposable funds (part-time salary, scholarships, etc.), parental financial support as the proportion of total disposable funds as the eight indicators to determine whether college students are affected by financial exclusion, and the meaning of each factor assignment, descriptive statistics, and expected estimates.

About 81% of the interviewees surveyed are undergraduates, the average cultural level is 1.81, and the education level is generally higher; the average annual income of college students is 3770 yuan, and the average annual support for parents is 12,160 yuan. The average ratio is 75.37%; the data of these indicators indicate that the income level of college students is relatively low, relying heavily on the financial support of parents, and the economic independence is poor; the average degree of trust in financial institutions is 3.19, and the average value of family members are engaged in the financial industry is 0.28. The average value of loan exclusion and savings exclusion was 0.66 and 0.63, respectively, which indicates that 66% of college students were excluded from loans and 63% were excluded from savings. This indicates that college students are generally financially excluded and the phenomenon is more serious.

According to the above definition of related variables, the explained variables identified in this paper are dummy variables and are binary selection variables, and the Probit model has been widely applied and verified in the study of binary selection models. Therefore, this paper also determines the Probit regression model to analyze the factors affecting college students' financial exclusion. The basic form of setting the model is:

$$P(y_1=1)=\Phi(\alpha_1+\beta_{1i}x_i+\gamma_1 y_2+\varepsilon_1) \quad i=1,\ 2,\ 3...8 \tag{1}$$

$$P(y_2=1)=\Phi(\alpha_1+\beta_{2i}x_i+\gamma_2 y_1+\varepsilon_2) \quad i=1,\ 2,\ 3...8 \tag{2}$$

Models (1) and (2) represent the influencing factors of loan exclusion and savings exclusion respectively; $\Phi(\bullet)$ is the cumulative function of the standard normal distribution; α_1 and α_2 are the constant terms of the two models; β_{1i} and β_{2i} are respectively coefficients of each influencing factor in the two models; in the model, the savings exclusion and loan exclusion are used as explanatory variables respectively, so γ_1 and γ_2 are introduced as the coefficients of savings exclusion and loan exclusion in the two models; ε_1 and ε_2 are two random interference terms of the model.

3. Empirical Analysis

Based on the influencing factors and field research data of college students' financial exclusion determined by this paper, EViews10.0 statistical software is used for Probit regression analysis. The specific regression results are shown in Table 1.

From the regression results of the Probit model of college students' savings exclusion in Table 1, it can be seen that among the index factors identified in this paper, the factors that have a significant and stable impact on college students' savings exclusion are: the gender of college students, whether the college students themselves are economic or financial major, annual income level, parental financial support, and whether there are members in the family who work in the financial industry. Specifically, the average value reduced by 1 when his major is finance or economic, the probability of deposit exclusion increases by an average of 59.80%; when the family members are engaged in the financial industry, the probability of deposit exclusion is reduced by an average of 7.31%. And the parental financial support of college students increased by 1,000 yuan or the parental financial support accounted for 1% of the total disposable funds, the possibility of college students being excluded from savings decreased by 22.30% and 11.87% respectively.

Factors of whether college students are the economic or financial majors have passed the significant test of 1% significance level which shows that when the college students themselves have a higher understanding of economic and financial knowledge, he is more likely to be subject to savings exclusion, which is inconsistent with our expectations. After analysis, the more college students understand financial products, the higher their requirements, so they are more strongly excluded. At the same time, factor of the parents' financial support also passed the significant test under the 1% significance level, and the coefficient is negative. This shows that the greater the financial support of the parents of college students, the stronger the ability of college students to obtain financial savings products and services. The price exclusion is small and the possibility of financial savings exclusion is reduced.

The factors of the gender of college students, whether members of the family are engaged in the financial industry and parental financial support accounted for the percentage of total disposable funds passed the significant test at 5% significance level. When members of the family is engaged in the financial industry, compared with other college students whose are not engaged in the financial industry, they have more opportunities to access financial savings products and related services. They can even reduce the degree of difficulty in financial savings through some relationships. In addition, parental financial support accounted for a significant proportion of its total disposable funds at a level of 5%, and the coefficient is negative, indicating that parental financial support accounts for the negative impact of the proportion of total disposable funds on whether college students are subject to savings exclusion.

Except for the above variables passing the significance test, none of the other variables passed the significance test.

From the regression results of the Probit model of college students' loan exclusion in Table 1, it can be seen that among the index factors identified in this paper, the factors that have a significant and stable impact on college students' savings exclusion are education background, parents' financial support accounts for the proportion of total income, whether they are the economic and financial major and whether there are family members engaging in financial industry. The specific performance is that when the average value is reduced by 1, the probability of loan exclusion is increased by 48.30% when his major is financial or economic major and the degree of loan exclusion is reduced by 37.02% and 5.86%, respectively, when the he is a undergraduate or the family member is engaged in the financial industry. The parental financial support of college students increased by 1,000 yuan, the parental financial support accounted for an average increase of 1% of the total disposable funds, and the possibility of loan exclusion decreased by 22.78% and 11.52% respectively.

The factors of the academic level of college students and the proportion of parental financial support to total disposable funds have passed the significant test under the 1% significance level. Students with bachelor degree in the process of research are more likely to get bank trust than junior college students. After analysis,this may be because bank credit institutions tend to trust higher-educated college students and believe that their loan credits will be better, and some institutions also cooperate with local elite schools to reduce loan exclusions. At the same time, the factor of the proportion of total income of parents' financial support has also passed the significant test under the 1% significance level, which shows that the greater the financial support of college parents, the stronger the ability of college students to repay loans, the loans encountered the smaller the possibility of price exclusion, the less likely the college students are excluded from financial loans.

The factors of whether university students are economic and financial majors , whether members of the family be engaged in the financial industry, have passed the significant test under the 5% significance level. When members of the family are engaged in the financial industry, they can reduce the difficulty of obtaining financial loan products and services through some relationships. This also shows that China's financial market still needs constant improvement, and the system in the process of loan approval and issuance is not sound enough. In addition, the factor of whether college students are economic and financial majors have passed the 5% significance level, and the coefficient is also negative, the reason should be roughly similar to the savings exclusion.

Except for the above variables passing the significance test, none of the other variables passed the significance test. It is worth noting whether the impact of college students' savings on college students' loan exclusion has passed the significant test at 1% significance level, which indicates whether college students are affected by deposit exclusion and whether they are affected by loan exclusion. There is a close correlation.

4. Conclusions

Through Probit analysis of 600 college students in Guangdong and other provinces, it can be seen that the phenomenon of financial exclusion of college students in China is widespread. Research data pointed out that college students get financial exclusion mainly by the parents' financial support, the proportion of income of parents support, if there is a family in financial industry, and the students' understanding of the financial industry degree of five factors. These findings have important implications for further research .We need to explore how to minimize the financial exclusion of college students from the perspective of banks, schools and students.

Acknowledgements. This research is partially supported by Provincial College Students Innovation and Entrepreneurship Project under grant No. 201811846030.

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Note:

Table1 Probit regression results of college students affected by financial exclusion factors

Variable	Savings exclusion				Loan exclusion			
	Coefficient	Standard deviation	Z statistic	P-Value	Coefficient	Standard deviation	Z statistic	P-Value
x_1	0.2673**	0.1319	**2.0270**	0.0427	0.0812	0.1276	0.6364	0.5245
x_2	-0.2856	0.1709	-1.6711	0.0947	-0.3702**	0.1663	**-2.2259**	0.0260
x_3	0.5980***	0.1354	**4.4153**	0.0000	0.4830***	0.1345	**3.5904**	0.0003
x_4	0.0516	0.1350	0.3820	0.7025	-0.1422	0.0724	-1.0823	0.2791
x_5	-0.2230***	0.0749	**-2.9784**	0.0029	-0.2278***	0.0608	**-3.1457**	0.0017
x_6	-0.1187**	0.0626	**-1.8978**	0.0577	-0.1152**	0.0363	**-1.8960**	0.0580
x_7	-0.0731**	0.0362	**-2.0212**	0.0433	-0.0586	0.0109	-1.6148	0.1063
x_8	0.0060	0.0107	0.5580	0.5768	0.0139	0.8835	1.2756	0.2021
y_1	3.2622	0.7780	4.1930	0.0000	—	—	—	—
y_2	—	—	—	—	3.1361	0.7709	4.0681	0.0000
Log likelihood	-284.2874				-298.6015			

** 、 *** respectively represent the corresponding coefficient at 5%、1% significance level significant.

Received: June 15, 2019; Published: July 1, 2019