What Affects Credit Limit for College Students in China?--Take Third-party Consumer Credit as an Example

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Keywords: Credit Limit, Internet Credit Business, College Student.

Abstract: Advances in financial technology have provided opportunities for the continuous development of the Internet credit business. Online financial platforms are directly connected to consumers through online shopping, third-party payments, and other services, and these consumers are the target customers for further credit services. College students, as one of the main customer groups for Internet consumption, have a high willingness to consume, and they have a strong willingness and ability to accept new ways for excessive consumption. At present, many college students start to use emerging Internet credit services. In this paper, a questionnaire survey was conducted on college students from six “211” universities in Nanjing. The respondents’ age, living expenses, credit limit, and credit consumption were collected for an empirical study of the possible reasons affecting college students’ Internet credit limit through the Tobit model. The results of the study show that the coefficient of age is positive and significant. Students who have used Internet credit tools have higher credit limits. The impact of the Amount of Credit Consumption is also significant, but negative. Living expense shows a significant and positive impact. Finally, this paper makes suggestions on the supply and use of credit for college students in light of the above factors, so as to promote a healthier concept of credit consumption among college students; also, to reduce the default repayment rate and make the college student consumer credit market high quality.

1. Introduction

The recent international situation has become increasingly volatile, with the global economic situation showing a downward trend, and China is under pressure to reduce both its export trade and domestic investment. Domestic consumption, as an important part of economic structural reform, plays a key role in promoting China's economic recovery and development. As an important measure to stimulate consumer demand, consumer credit, combined with Internet technology, plays an increasingly important role in today's social economy. And with the continuous expansion of colleges and universities, the number of college students, the main force of household consumption, continues to climb. And according to China's National Bureau of Statistics, the number of college students in China's ordinary colleges and universities reached 30.18 million in 2017 [1]. The huge Internet consumer credit market derived from this has long been the focus of financial institutions. Since 2002, commercial banks have begun to issue a large number of credit cards to college students, which led to a series of high default rates and other problems. In 2009, the China Banking Regulatory Commission (CBRC) required banks to regulate the student credit card business, and the market share of college credit cards declined significantly. In 2013, campus loans entered the explosive growth stage due to its lack of regulatory mechanisms, irregular business practices, and a series of adverse events, also by the CBRC called off.

In addition to traditional commercial bank credit cards, in the emerging market of Internet consumer credit in China, Internet consumer credit relying on third-party payment platforms has become the choice of more college students. As an emerging form of Internet consumer credit, third-party payment credit uses a third-party system platform to access users' daily consumption information and personal information to set credit limits, but users can still adjust the limits according to their own personal wishes. The reasons for the failure of college students' credit cards and campus loans are not unrelated to the setting of credit limits, so this paper analyzes and researches the reasons affecting college students' credit limits by investigating the information of college students.

2. Literature Review

Zhao Ailing [2] stated that the main reason for the large gap between the consumption standards of Chinese domestic people and those of foreign countries is the poor development of domestic consumer credit loans. Zang Xuheng and Li Yanqiao [3] comprehensively analyzed Chinese national economic data and domestic people's consumption behavior in recent years, and concluded that consumer credit loans had brought great motivation to people's consumption. Hu Juan [4] points out that college students have different consumption behaviors from ordinary residents because of their campus environment, age, and education. In addition, it is also important to note that students are more likely to overspend and consume passionately. Through a questionnaire-based empirical study, Xing Yan [5] found that the characteristics suggested by WenZhuo are prevalent among Chinese university students, and have intensified over the past eight years. Zhao Li [6] argued that college students would gradually become dependent on Internet consumer credit products, which will lead to over-consumption by college students. Zhang Xiao [7] found through a questionnaire that about 60% of college students in China know something about Internet consumer credit and most of them have used Internet consumer credit products. Through a questionnaire survey and model analysis, Hongxuan Wang [8] found that Chinese university students are greatly influenced by Internet consumer credit loans, and the consumption standards of students who have used them are significantly higher than those who have not.

As the number of university students who hold non-traditional credit instruments has grown steadily, it is time to consider the influence of the phenomena, especially in consumption. A lot of researches have been conducted to analyze the relationship between credit increase and consumption behaviors change among young family holders. In “Intertemporal Consumption and Credit Constrains: Does Total Expenditure Respond to an Exogenous Shock to Credit?” [11], Soren Leth-Petersen found that the household expenditure and debt were affected by an exogenous increase in access to credit provided by a credit market reform, and the effect was strongest for younger households.

Access to credit is an important driver of consumption growth. The research “Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior?” [12] illustrated that increases in credit limits generated an immediate and significant rise in debt; in addition, the negative correlation between young individuals’ more limited credit records (and credit access) and state-level consumption growth, suggesting that more limited credit availability for young adults may have contributed to the slower-than-anticipated recovery in consumption growth following the Great Recession [13].

In summary, in the aspect of consumer credit for college students, the research focuses on theoretical research and empirical research on the influence of consumer credit products on the consumption behavior of college students, but there is a lack of research on consumer credit products themselves. Therefore, this paper takes an emerging product - third-party payment consumer credit - as an example to conduct empirical research, and tries to give the influencing factors of the consumer credit amount for college students, in order to help the further development of this emerging consumer credit product and the consumer credit market for college students.

3. Data and methods

The data used in this paper is primary and proprietary, coming from the research that investigated the current credit situation of university students last year.

Six 211 universities in Nanjing were selected (Nanjing Agricultural University, Nanjing University of Technology, Nanjing University, Southeast University, Nanjing University of Aeronautics and Astronautics, and Hohai University) and 250 questionnaires were randomly distributed on-site, which were distributed in Nanjing's Xuanwu District (50 from Nanjing Agricultural University's Weigang Campus and 45 from Nanjing University of Technology), Jiangning District (35 from Southeast University's Jiulonghu Campus, and (35 from Nanjing University of Aeronautics and Astronautics General Road Campus) and Gulou District (40 from Nanjing University Gulou Campus and 45 from Hohai University Gulou Campus), thus ensuring the randomness of the questionnaire data to a certain extent. At the same time, the overall quality of the students in the six 211 universities was higher, which was more conducive to the smooth conduct of the survey. In the questionnaire, the basic information about the participants was collected, including their age, sex, major, living expense, family income, and their credit instruments conditions.

In addition, this questionnaire also investigated the willingness to use online credit instruments and risk perception.

Of the 236 questionnaires returned, 129 people, or 54.7% of the total sample, used credit instruments, such as Ant Credit Pay and Jingdong Baijiao to make purchases; 64 people, or 27.1% of the total sample, were from business administration majors; and 143 of them, or 60.6% of the total sample, were male.

This data has the following advantages. First of all, the data is first-hand data, coming from this survey, with a large sample and a certain degree of reliability. In addition, not only the personal status of college students, such as gender and age, and objective indicators, such as credit limit, living expenses, and family income were investigated, but also their subjective psychological conditions on the use of credit consumption, which help to further explain what influential factors are related to the credit limit of college students.

There are, however, some drawbacks. First, since the data are reported by the respondents themselves, there is no guarantee that the data are completely true. Also, some questionnaires have problems, such as incomplete responses. Second, the sample is mainly from six 211 universities in Nanjing, so there may be some errors in conducting an empirical study on the credit consumption of college students from all areas of China based on this sample.

In the article, the Tobit model is used to analyze what factors contribute to the credit limit of university students. In studying the factors influencing the credit limit (Credit Limit), the sample has a high proportion of limits equal to zero, some of which are due to not using credit instruments, and some of which once used credit, but the limit on credit is unknown now. This situation is not reflected in the data. Therefore, the samples with credit limits higher than zero are focused on, where the credit limit is the limited dependent variable on the left. According to the analysis, more than 10% of the explained variables in the sample are zero and therefore need to be truncated. For the truncated data, the Tobit model is used when the left-hand side constraint is 0, and there is no right-hand side constraint.

Table.1. Definitions of Variables

Variable name	Symbol	Variable definition
Age	a	Age of informants
Gender	g	Gender of informants (M = 1; F = 0)
Hometown	h	Hometown of informants (Municipality Directly under the Central Government=6; Capital city =5; Prefecture-level city=4; County town=3; Township=2; Rural area=1)
Living Expense	le	Monthly living expense of informants (<1000¥ = 1000; 1001¥-2000¥ = 2000; 2001¥-3000¥ = 3000; 3000¥-4000 ¥ = 4000; ≥ 4000¥ = 5000)
Use of Credit Instruments or Not	uc	Use of credit instruments or Not (Yes = 1; No = 0)
Amount of Credit Consumption	con	Monthly consumption through credit instrument
Family Income	f	Annual family income of informants

Six explanatory variables are selected from the questionnaire (Table.1.): age, whether or not they use credit, credit consumption use, cost of living, hometown, and family income to explore the factors influencing the credit limit. The descriptive statistics of the variables are shown in Table.2.

Table.2. Descriptive Statistics for All of the Variables Utilized in the Study.

VarName	Obs	Mean	sd
Age	235	20.89	2.39
Use of Credit Instruments or Not	235	0.55	0.50
Amount of Credit Consumption	235	444.93	795.22
Living Expense	235	2251.06	754.44
Hometown	235	3.57	1.32
Family Income	201	67.35	705.03

4. Equations and results

The model was set up as follows:

$$y_i^* = \beta_0 + \beta_1 a_i + \beta_2 uc_i + \beta_3 con_i + \beta_4 le_i + \beta_5 h_i + \beta_6 f_i + \varepsilon_i \quad (1)$$

$$y_i = \begin{cases} y_i^* & y_i^* > 0 \\ 0 & y_i^* \le 0 \end{cases}$$

In the model, y_i^* is the explained variable Credit Limit, which represents the credit limit of the respondent; β_0 is the constant term; β_1 to β_6 represent the regression coefficients of the explanatory variables: Age, Use of credit instruments or not, Amount of Credit Consumption, Living Expense, Hometown, and Family Income, respectively, and ε_i is the residual term.

The above model by Stata was regressed, and the regression results are shown in Table.3.

Table.3. Estimation Results for the Tobit Model

VarName	Credit Limit
Age	1667.5***
	(333.7)
Use of Credit Instruments or Not	17034.3***
	(2474.7)
Amount of Credit Consumption	-1.832*
	(0.902)
Living Expense	1.799
	(1.031)
Hometown	721.2
	(639.0)
Family Income	0.0140
	(0.859)
_cons	-53076.5***
	(8270.2)
var(e.credit limit)	68035474.6***
	(9608220.2)
N	133

Standard errors in parentheses * p < 0.05, ** p < 0.01, *** p < 0.001

Due to the peculiarities of the Tobit model, after the regression is completed, a bias effect estimation of Tobit is required for the analysis of the marginal effects of the explanatory variables.

(1) Bias effect estimation for the latent variable y_i^*

(2) Bias effect estimates for samples with credit limit greater than zero

The estimated results are shown in Table.1.

Table.4. Result of Bias Effect Estimation for the Tobit Model

VarName	(1)	(2)
Age	1667.5***	701.1***
	(333.7)	(4.75)
Use of Credit Instruments or Not	17034.3***	7161.7***
	(2474.7)	(6.63)
Amount of Credit Consumption	-1.832*	-0.770**
	(0.902)	(-2.02)
Living Expense	1.799	0.756*
	(1.031)	(1.74)
Hometown	721.2	303.2
	(639.0)	(1.13)
Family Income	0.0140	0.00590
	(0.859)	(0.02)
N	133	

t,z statistics in parentheses * p < 0.10, ** p < 0.05, *** p < 0.01

Based on the model results, it can be observed that age, whether or not the students use credit instruments, and credit consumption amounts have a significant effect on Credit Limit. After the bias effect estimation (2), the effect of living expense on Credit Limit also becomes significant. Since the samples with Credit Limit greater than zero are focused on, this paper follows the results of (2) for interpretation.

In the results, the coefficient of Age is positive and significant ($\beta_1 = 701.1,\ p < 0.01$), indicating that the older a student is, the more likely he or she is to have a higher credit limit.

The regression coefficient of Use of Credit Instruments or Not is positive and significant ($\beta_2 = 7161.7,\ p < 0.01$), indicating that the history credit records contribute to obtaining a high credit limit.

The impact of Amount of Credit Consumption is also significant, but negative ($\beta_3 = -0.770,\ p < 0.05$). The result is counter to as David's result (2001) about the relationship between consumption amount and credit limit.

Living Expense shows a significant and positive impact ($\beta_4 = 0.756,\ p < 0.1$). The coefficient proves that higher living expense (or income of university students) brings a possible higher credit amount to students.

5. Discussion

The empirical results show that the influential factors of Chinese university students' use of third-party consumer credit can be explained by four factors: "Age", " Use of Credit Instruments or Not ", "Credit consumption amount," and "Living expenses".

First of all, there is a positive correlation between college students' third-party consumer credit limit and "Age". It is not difficult to understand that as college students enter their senior years, they are more adaptable to the campus and society, and are more able to survive, and to afford a higher amount of consumer credit to meet their own needs. In a survey study of college students' Ant Credit

Pay consumer credit products (a representative third-party payment consumer credit product in China), Chen Chun and Shi Fuhou [9] also mentioned that the consumer credit overdue rate among the entire sample of college students was 9.43%, and excluding freshmen, 11.21% of older college students had overdue experiences. This shows that older students are more likely to be late as they get older, engage in more social activities, spend more, and increase their credit limits as they become more experienced with credit.

Second, " Use of Credit Instruments or Not " is positively related to college students' credit limits, with the regression coefficient of "whether or not to use credit tools" having the largest weight of 7161.7. This indicates that exposure to credit tools will prompt college students to increase their credit limits. As mentioned by Lan Wei, Jingyi Fan, and Li Xia [10] in their study on early consumption behavior of college students, it was found after cross-tabulating the study data that as the frequency of consumer credit use increased, the maximum single credit consumption amount of college students also increased, and the total credit consumption amount also increased. This indicates that as the frequency of using credit tools increases, college students' trust and reliance on consumer credit products will also increase, thus increasing their credit limits.

However, there is a negative correlation between "Credit consumption amount" and college students' credit limits, and the regression coefficient is -0.770. According to Tingting Yu [14], the results of this study illustrate that when a college student has access to a higher credit limit, he or she will have a better understanding of the credit risk of late payment. In other words, college students may try to reduce their use of consumer credit products, resulting in a reduction in the amount of consumer credit available. In addition, the students with abilities to afford high consumption usually have more cash, accordingly, less usage of credit instruments.

The last factor, "Living expenses" is positively correlated with the college students' credit limits, with a regression coefficient of 0.756. This means that the higher the cost of living, the higher the amount of consumer credit a college student is likely to receive. This is undoubtedly easy to understand; the higher a college student's disposable living expenses are, the greater their ability to repay consumer credit, which makes them more likely to increase their own consumer credit limit.

6. Conclusion

From the analysis of this survey, it can be seen that: "Age"," Use of Credit Instruments or Not ", and "Living expenses" all are positively correlated with the amount of consumer credit available to college students." Credit consumption amount" is negatively correlated with the amount of consumer credit for college students.

From a certain point of view, this may provide suggestions for the operation and management of the most popular third-party payment consumer credit product in the current college student consumer credit market, so that this consumer credit product will not end up failing due to the mismanagement of consumer credit lines, as in the case of college credit cards and campus loans. Firstly, although college students' ability to repay credit increases with age, their default repayment rates also increase. This requires that the management of the consumer credit limit should not allow older students to blindly increase their consumer credit limit, but should differentiate the limit for different age groups to prevent the default rate of college students from increasing with age.

The suggestion is to set the limit on the credit consumption amount for college students in a stepwise manner, while the factors of "Use of Credit Instruments or Not " and "Living expense" are positively correlated with each other. It is also suggested that a freeze should be imposed on the amount of consumer credit for a short period of time when the amount of consumer credit is continuously raised, so as to give students a cooling-off period instead of allowing them to increase the amount of consumer credit, which would lead to a distorted consumer attitude due to excessive reliance on consumer credit.

This paper suggests that managers should provide incentives for the negative correlation between the factor "Credit consumption amount" and the amount of consumer credit for college students. This will promote the ability of college students to discover the credit risk on their own and help them to establish a healthy consumption concept by consuming moderately in advance. It also reduces the default repayment rate and makes the college student consumer credit market high quality.

References

[1] iResearch. Research Report on Consumer Finance Market for Students in China [R]. iResearch, 2017.

[2] Zhao Ailing. On the relationship between consumer credit and income and economic growth [J]. Research on Financial and Economic Issues, 2000, 10(10): 34-37.

[3] Zang Xuheng, Li Yanjiao. Consumer Credit, Liquidity Constraints and the Consumption Behavior of China's Urban Residents: An Empirical Analysis Based on Interprovincial Panel Data from 2004 to 2009 [J]. Economic Perspectives, 2012(2): 61-66.

[4] Hu Juan. Research on consumer psychology and consumer behavior of university students [J]. Psychological Science, 2003, 26(2): 297-300.

[5] Xing Yan. Analysis on Consumption Issues and Approaches to Contemporary College Students [D]. Soochow: Soochow University, 2013.

[6] Zhao Li. The Impact of Internet Credit on the Consumer Behavior of College Student [J]. Modern Economic Information, 2015(23): 293.

[7] Zhang Xiao. Comparitive Study on College Students' Internet Consumer Finance Products [D]. Anhui: Anhui University, 2016.

[8] Wang Hongyu. Research on Effects of Internet Consumer Credit on Consumption Behaviors of College Students [D]. Beijing: Beijing Foreign Studies University, 2017.

[9] Chen Chun, Shi Fuhou. Survey on Credit Risk of Collegians' Ant Huabei Consumer Credit Products [J]. Credit Reference, 2019, 37(10): 78-92.

[10] Wei Lan, Fan Jingyi, Li Xia. A Study on Early Spending Behavior of College Students: An Example of Ant Chanting [J]. Modern Business, 2020(21): 15-17.

[11] Soren Leth-Petersen. Intertemporal Consumption and Credit Constrains: Dose Total Expenditure Respond to an Exogenous Shock to Credit?[J]. The American Economic Review, 2010, 100(3): 1080-1103.

[12] David B. Gross, Nicholas S. Souleles. Do Liquidity Constraints and Interest Rates Matter for Consumer Behavior? [J]. Evidence from Credit Card Data. The Quarterly Jouranl of Economics, 2002, 117(1): 149-185.

[13] Cooper, Daniel, Olga Gorbachev, and María José Luengo-Prado. Consumption, Credit, and the Missing Young [C]. Federal Reserve Bank of Boston Research Department Working Papers, 2019, 19(10).

[14] Yu Tingting. Research on Effects of Internet Consumer Credition Consumption behaviors of College Students – Taking Ant Check Later as an Example [D]. Hainan: Hainan University, 2019.