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Credit Card Adoption and Usage in China: Urban-Rural Comparisons

Abstract

This study examines differences in credit card behaviors between rural and urban households in China. Using data from a national survey of Chinese households, results show distinct differences between rural and urban respondents in credit card adoption and usage even after controlling for relevant demographic, financial, attitude, and expectation variables. Rural households are less likely to possess a credit card, possibly due to supply side limitations such as lack of financial institutions and low rate of credit card acceptance in rural areas. No urban-rural difference is found in credit card payment behavior. Implications for policymakers and credit card issuers are discussed.

Keywords: China, consumer behavior, credit card, urban-rural comparisons

JEL: C20, D10, D19

1. Introduction

The first round of domestic credit cards in China were issued by the Bank of China in 1985. These early cards rarely included revolving credit or interest free periods for repayment like the usual practice in other nations. In recent years, credit usage has expanded considerably in China despite the government mandating a maximum annual interest rates of 18% which might limit profitability to card issuers (Bloomberg, 2013). By the end of 2014, the number of credit cards issued in China reached 460 million with a rate of 58.7% being active cards and the sales using credit card were accounted for 58.0% of the national social consumption retail sales. However, by the same time, the total unpaid credit card loan balance was 2.3 trillion yuan, increased by 27.2% compared to 2013 (China Banking Association Credit Card Committee, 2015).

It has been estimated that between 3-8% of credit card holders are revolving credit, a figure much lower than the current 40% of credit card revolving users seen in the United States. Out of 2.4 million bankcards issued in China, only 20% are credit cards, the rest comprised of debit cards and other options lacking a credit line component (Bank for International Settlements, 2012).

Credit card penetration in China still lags behind other countries at similar stages of development, despite the recent economic boom experienced in that country (Credit Suisse, 2013). In East Asia, credit card adoption is around 12% to all adults, a figure lower than the averages observed in high income OECD countries (53%), Latin America and Caribbean (20%), and Central Asia (15%). In contrast, the savings rate is still much higher in China than other emerging markets. Policymakers in China have been looking for opportunities to foster the demand for more consumer loans in the country, including a higher dissemination of credit cards (Boston Consulting Group, 2011). While socio-economic, psychological, and cultural factors might explain a considerable part of the low demand for credit cards and other forms of debts in China, supply side limitations can also explain part of the issue.

Previous research on credit card behavior in China is limited but emerging (e.g. Sharpe, et al., 2011, and other studies cited in the literature review section). However, all existing studies examined this topic using limited urban samples in China (Worthington, et al., 2007). In this paper, we explore factors associated with credit card demand by comparing urban and rural users in China. Our indicator of living in a rural area serves as a proxy for areas where credit card issuers are less prevalent and where access to financial institutions might be difficult. In other words, deficiencies in the supply side might prevent consumers from acquiring a credit card.

We further our analysis by also contrasting how credit cards are used differently by urban and rural consumers. Here, our dependent variable is the credit card behavior of paying the balance in full. Previous research has differentiated between two main types of credit card users: *revolvers* and *convenience users* (Kim and Devaney, 2001). Revolvers

carry a balance on their credit cards, using it as a personal line of credit. Convenience users might be more interested in using their cards as a form of payment or in collecting rewards/bonus points. Finding differences in how rural and urban consumers use their cards can help inform policymakers and financial institutions on how to best reach these potential consumers.

This study attempts to contribute to the literature of consumer finance in China by including rural households in analyses, a group seldom examined in previous research. Roughly half of China population lives in rural area and understanding their unique financial needs is an important factor in promoting their financial wellbeing and improving the country's financial industry services as a whole.

2. Literature Review and Hypotheses

2.1 Factors associated with credit card adoption

Several studies examined factors associated with credit card adoption. Baek and Hong (2004) with data from the U.S. Survey of Consumer Finance found that several demographic factors (life cycle stages, single parenthood, education, race) and financial factors (home ownership, employment, and income) are associated with the decision to own a credit card. Kaynak, et al. (1995) with data from Turkey showed that frequency of using credit card is associated with gender, education and income. Hayhoe et al. (2005), based on American college student samples, found that credit attitude, money attitude, imagined interaction with parents, having student loan, having financial education, age, and ethnicity are associated with having four or more credit cards.

Several studies used Chinese data to examine factors associated with credit card adoption. Sharpe, et al. (2012), using data from the 2008 Survey of Chinese Consumer Finance and Investor Education, found that factors associated with Chinese urban consumers holding a credit card include several socioeconomic factors (income, age, education, occupation) and financial knowledge variables (awareness of credit card risks,

default consequences, the credit system, and that late payments increase interest). Gan, et al. (2014) with data collected among 500 consumers from the city of Shijiazhuang, China, showed that several card features (convenience, interest rate, application process, reward program, and credit limit) and demographic characteristics (household size, marital status, and age) are positively associated with the respondent's likelihood of owning a credit card. Liu (2009), through a telephone survey in five major cities in China, explored Chinese credit card users' level of awareness about and factors associated with credit card reward programs.

Access to internet is also a potential motive to obtain a credit card. Credit cards are one of the most popular forms of payment for online purchases. According to the China Internet Network Information Center (CNNIC, 2015), only 28% of Chinese internet users lived in rural areas for an internet penetration of 18.5% compared to a national average of over 50%. Similar to access to financial institutions, households without internet access might have less need of a credit card or other forms of payment that can be used online.

2.2.1 Factors associated with card debt borrowing

Several studies used data from the U.S. Survey of Consumer Finance to examine factors associated with credit card debt borrowing behavior. Chien and DeVaney (2001) showed that credit card debt is associated with household size, education, marital status, professional status, income, and credit attitude. Kim and DeVaney (2001) found that education, income, real assets, credit card interest rate, number of credit cards, the credit limit, a positive attitude to credit, and behind schedule payments are positively related to the outstanding credit card balance. Lee and Kwon (2002) identified factors associated with revolving credit card users (vs. inactive users) that are credit related factors (credit card balance, limit, attitude, and bad credit history) and demographic factors (income, age, education, marital status, and ethnicity). Baek and Hong (2004) showed that several demographic factors (solidary household, single parenthood, education, and race) and

financial factors (financial and non-financial assets, home ownership, and employment) are associated with the decision to borrow credit card debt.

Some researchers examined relevant psychological factors on consumer credit borrowing behavior. Yang, et al. (2007) showed that unrealistic optimism regarding future borrowing behavior is related to credit card borrowing behavior. Tokunaga (1993) found that unsuccessful credit card users, those with credit-related problems, display greater external locus of control, lower self-efficacy, viewed money as a source of power and prestige, took fewer steps to retain their money, displayed lower risk-taking and sensation-seeking tendencies, and expressed greater anxiety about financial matters than successful users.

Several studies used college student samples to examine factors associated with credit card borrowing behavior. Hayhoe et al. (2000) found that affective credit attitude, financial practices and financial stressors are associated with holding credit cards with a balance. Lyons (2008) identified several demographic and financial factors associated with having credit card debt over \$1,000. Wang and Xiao (2009) showed that buying patterns and social networks affect credit card indebtedness. Robb and Sharp (2009) found that financial knowledge is positively associated with credit card balances. Xiao et al. (2011) showed that financial knowledge reduces risky credit behavior.

A few studies examined credit card borrowing behavior using data from developing countries. Wickramasinghe and Gurugamage (2009) use data from Sri Lanka and found that debt ceiling contributed significantly to indebtedness of credit card. Wang, et al. (2011) used data from a mail survey in China and showed that revolving credit use is related to several demographic and psychological variables (self-control, self-esteem, self-efficacy, deferring gratification, internal locus of control and impulsiveness). The same group of researchers (Wang et al., 2014) used account data from a Chinese commercial bank and found that credit limit, gender, length of ownership of a credit card, and the total credit card expenditure, age, the square of age, credit ranking, and risk ranking are closely related to the likelihood of having revolving credit debt.

2.3 Rural and Urban Differences in China

To our knowledge, research on comparing credit card behaviors between urban and rural consumers is limited. We assume that living in rural China limits access to credit card even after controlling for other factors. In fact, China has a typical urban-rural dual economy structure, and the urban areas are significantly more developed than the rural which has been shown to generate geographic inequality (Sicular et al., 2007). The income or consumption disparity between these two areas is a good way to measure the gap between the urban and rural areas. Table 1 shows the comparisons of the income, expenditure and Engle's Coefficient between urban and rural households from 2000 to 2015. The income and consumption of both areas increased in the sample period, but the ratio of urban/rural is around 3, which means the per capita disposable income of urban households triples that of rural households. This is a great gap between urban and rural areas, through the ratio drop slightly because the government focuses more on the rural livelihood. The consumption expenditure ratio of urban/rural is great, though it decreases from 4.11 to 2.32, which is mainly because the consumption of rural households grows faster than the urban. Also, the Engel's Coefficient of urban households is significantly lower than the rural areas. Apart from these, it is commonly accepted by the native researchers that rural areas also lag behind in many aspects such as education, public health, employment, public security, etc., due to the "Urbanization" policy in the past decades. Due to the urban-rural disparity, investigating Chinese credit card behavior with only urban samples is not enough.

The urban-rural gap also leads to the disparity in the access to financial institutions and credit card. According to our calculation of the Chinese Family Panel Studies (CFPS) data, the average distance from rural households to the county center is 24.51 kilometers, and it would cause 4.35 hours to travel from home to the county center for rural households (see Xie and Hu, 2015 for more information on this panel survey)¹. Since few bank

¹ The data comes from question G2 and G201, the Community Questionnaire of Chinese Family Panel Studies (CFPS).

subsidiaries or other financial institutions can be found in Chinese rural areas, it is difficult for Chinese rural households to get access to financial institution or credit card. Besides, some studies indicate that credit card ownership is negatively related with age, but many young adults from rural areas will leave to seek work opportunities in big cities², increasing the urban-rural disparity (Zhao 1999). Another important issue is the culture. Chinese people tend to save money for children's education, children's marriage, disease and so on, rather than advance consumption, and the credit card is also not commonly accepted as a method of borrowing. Table 2 reveals borrowing choices for urban households, where 49.33% of households choose "relatives" as the first preferred, "banks" (including credit card) comes in second and "won't borrow in any case" comes in third place. All the above helps to understand the background of the urban-rural disparity and the differences in credit card ownership.

The supply limitations may result in difficulties in access to financial institutions and ability to use credit cards as a form of payment that hinders credit card growth in rural China. While other studies have been mostly concerned with individual factors and preferences, we further the existing literature by incorporating living in rural area as a proxy of lacking supply to our analysis. Because rural consumers get less exposure of modern financial services including credit card, they may be less likely to use credit card and make credit card payment in full. Based on the previous literature review section and above discussion, we test the following hypotheses:

H1: Compared to urban consumers, rural consumers are less likely to hold credit cards.

H2: Compared to urban consumers, rural consumers are less likely to make credit card payment in full.

² According to "2016 Survey Report on Rural Migrant Workers" from National Bureau of Statistics of China, there's 281.71 million rural migrant workers in 2016, which amounts to 45.54% of the rural population, and 77.5% of them are between 20 to 55 years old.

3. Methods

3.1 Data

Data used in this study were from the 2011 China Household Finance Survey (CHFS), a nationally representative sample of 8,438 Chinese households conducted by Survey and Research Center at the Southwestern University of Finance and Economics (SWUFE). Those households represent 320 communities across 80 counties and 25 provinces of China. From this random sample of households, 29,500 individuals were interviewed in order to provide detailed information on their financial assets and liabilities.

Observations missing the answer to where the respondent's house is located – in rural or urban area – have been dropped from this analysis. Mean imputation was used to replace missing values in other covariates. The expenditure variable had 1,231 observations with missing values while seven variables had 22 or fewer observations with missing values that were replaced with mean values. The final sample used in this study comprised of 29,324 observations.

3.2 Variables

The first dependent variable is credit card holding that is a dummy variable. The second dependent variable is whether making credit card payment in full that is a dummy variable too.

The interested independent variable is rural status, where 1 if a respondent living in a rural area, otherwise 0. Following previous research, several risk attitudes and economic expectations variables were included.

Three variables of attitudes towards risk were included: investment choices, wearing seatbelts, and obeying traffic laws. For the variable of investment choices, respondents were asked how they would invest assets ranging from 1-5 where 5 represents a high risk, high return investment while 1 represents unwilling to take any risk. Respondents were asked if they normally wear seatbelts and the variable was coded as 1 if not wearing seatbelt and 0

other. Finally, respondents were asked if they follow traffic rules and waited for the stop light when crossing a road and the variable was coded 1 if not obeying traffic rules. Previous research shows that financial, health, and ethic risk takings are correlated (Weber et al. 2002). Since credit card is a relatively new product for Chinese consumers, we expect that consumers with more risk taking are more likely to use credit card and less likely to make full payment.

Economic expectations were measured using three survey items: changes in interest rates, changes in consumer product prices, and changes in housing prices for the coming year. Respondents were able to choose from five options in Likert type scale from 1 (reduce a lot) to 5 (rise a lot). We expect that consumers who believe the prices will rise are less likely to use credit card and more likely to make full payment. This study also includes the following control variables: education attainment, age, gender and marital status, family size, working status, and expenditure. We used expenditures to measure economic status and as a proxy for income due to the considerable number of missing responses to the wage question in the survey; less than five thousands surveys included an actual wage figure listed. In addition, we included a dummy variable to indicate if the respondent answered the wage question with an actual income figure in an attempt to control for those that skipped this question.

3.3 Data Analyses

We used the following model (Equation1) to estimate results using our data:

$$Y = \alpha + \beta_1 X + \beta_2 \delta + \beta_3 \gamma + \beta_4 \theta + \beta_5 \lambda + \epsilon$$

(1)

where δ is a vector of demographic variables including education attainment, age, household size, gender, and marital status of respondent, γ represents measurements of economic status. θ captures three indicators of risk attitudes while λ captures three variables on economic expectations. Our main variable of interest, X , is a binary where 1 represents a

rural household. The error term ϵ is independent and identically distributed with a mean of zero and variance of σ^2 .

The model was first used to estimate the odds of having a credit card where the dependent variable Y is a binary where 1 indicates the household has a credit card. In our second model, Y is again a binary where 1 represents paying credit card balance in full.

Our model specification is based on the previous literature mentioned earlier on this manuscript to include variables relevant to demand for credit and/or credit cards in particular. In addition to indicators of economic status and demographic information, regression include measurements of risk preferences and economic expectations, both potential influencers on the adoption and usage of credit cards.

4. Results

4.1 Results of Bivariate Analyses

We found that 1,611 respondents owned a credit card in the sample, the majority of the credit card holders lived in urban areas. In fact, credit card penetration was 7.5% in urban areas (1,246 credit card holders out of 16,755 respondents) while less than 3% of the rural respondents owned a credit card. Table 3 reports summary statistics by credit card holding status. Many of the contrasts between both groups are statistically significant. Credit card adoption increases with higher educational attainment up to the college level but no difference is found at the graduate school level. Along the same lines, more than half of respondents without a credit card did not finish high school, Age shows little correlation with credit adoption except for those in their peaking earning years between 30 and 50 years old where it rises and then declines at older ages. Family size has an inverse correlation with credit card holding while gender and marital status of the respondent was not significantly associated with credit card ownership.

Higher consumption is related to higher credit card adoption as indicated by the expenditures variable. Credit card holders claimed 50% more expenditures than non-holders. Credit card holders were also more likely to answer the wage question and to have a checking account. Data from the survey shows that while 65% of urban respondents have a checking account, only 42% of rural respondents own a checking account, a disparity that might also point toward a lack of access to formal banking in the rural areas of China.

The set of risk attitudes variables all displayed significant differences between groups. Credit card usage is associated with higher investment risk taking. However, obeying traffic laws and wearing a seat belt are negatively correlated to having a credit card.

The last set of variables displayed in Table 3 examines respondents' economic expectations in several aspects. Here we find that credit card holders are more likely to expect a rise in interest rate and consumer product price while those without a credit card are more likely to expect an increase in housing prices.

Table 4 reviews differences of urban and rural households currently carrying a balance on their credit cards, i.e. credit card revolvers. We find that rural revolvers have lower education attainment and are part of larger households than urban revolvers. While rural revolvers are more likely to be employed since farming count as employment, they exhibit lower expenditures and less checking account ownership. Rural revolvers displayed minor differences in both risk attitudes and economic expectations compared to their urban counterparts: they shy away from riskier investment choices and expect housing prices to go up. All results observed in Table 4 appear consistent with the usual variations between rural and urban Chinese households as previously described.

4.2 Results of Multiple Logistic Regressions

In our multiple logistic regressions, we used maximum likelihood estimations reporting odds ratios to facilitate interpretation of results. Our two outcomes of interest – having a credit card and paid in full – are binomial and coded 0 or 1. Our models used

clustered standard errors by households to allow for correlation among members of the same household. Coefficients over one indicate an increase in odds ratio of the dependent variable while coefficient of less than one are associated with a decrease on the odds ratio. As a robustness check, we ran the same specification using a linear probability model (LPM) with similar results. The results are not presented but available upon request.

Table 5 presents odds ratios of having a credit card. We conducted hierarchical analyses by first examining the bivariate relationship of the dependent variable and the variable of interest and then including more predictors in our models. This approach allows us to ensure proper fitting of the model by only including relevant independent variables. Bayesian Information Criterion (BIC) and McFadden R-square showed improvement with the addition of more variables across the columns. Column (1) shows that living in a rural area has a negative correlation with credit card adoption: rural respondents are less likely to have a credit card. In both columns (2) and (3) the rural indicator is still significant after adding other controls. The odds ratios show that rural respondents are less likely to have a credit card than their urban counterparts after adding control variables. Results from these two columns may be due to the lack of access of living in a rural area prevents credit card adoption in China even after controlling for economic status, risk attitudes, and economics expectations.

The last two columns of Table 5 present results of two subsamples to provide more insights on the determinants of credit use. Again we find some evidence that the rural and urban groups are noticeably different in their credit card adoption. For the urban group showed in column (4), unique significant factors are age, being a married female, wearing seatbelts, and having a checking account. While having a checking account is not a prerequisite for obtaining a credit card, credit card penetration is twice more likely when a checking account is also in place (from 3.5% to over 7% in all households). For the rural group in column (5), the unique significant factor is expenditure. In addition, for both groups,

higher education and more willing to take risks on investment choices are significant factors associated with credit card holding.

In Table 6, we limit our sample to only respondents with an active credit card for a total of 1,611 observations to test the relationship between payment in full and being in a rural area after controlling for other factors. Payment in full of the credit balance every month is considered to be a sign of desirable financial behavior while its opposites such as paying only the minimum balance or paying late are mostly likely to harm household finances. While the bivariate relationship in column (1) suggests that rural respondents are less likely to pay in full, the effect disappears after other variables are included in columns (2) and (3). Higher expenditures – a proxy for income – is associated with higher odds of paying card in full while expectations of higher consumer prices are related to lower odds, perhaps an indication of consumption smoothing. The coefficients for risk attitudes are somewhat surprising since it seems to indicate that households that take more risk in their investment choices are more likely to pay their credit card balance in full. However, over 40% of households are unwilling to take any risk and less than 14% are willing to choose above average risk investments.

Taking as a whole, these results imply that rural consumers are not managing their credit cards in a costlier manner than urban households and an increase in credit card adoption in rural areas could be potentially beneficial for rural households to smooth their consumption via credit, a notion with supporters in developmental economics (Rosenzweig & Binswanger, 1992).

5. Conclusion

This study attempts to examine urban-rural differences in credit card holding and usage using a large, national data set of China. Our geographic indicator of living in a rural area proxies for a barrier on the supply side and compares it to urban households. We find that Chinese rural households are less likely to have a credit card even after controlling for other factors previously linked to credit adoption shown in other studies. While other factors

not included in this study such as financial literacy and spending habits may also help explain the low demand for credit cards in rural China, our analysis points at some markedly differences between urban and rural households and it is supportive of our initial hypothesis that rural consumers are less likely to adopt credit cards.

Our study has not found urban-rural difference in paying credit card balances in full in China. The analysis is limited by the small sample size of only 365 rural households that own a credit card. As such, the lack of significant results may be attributed to the low power of the model. Despite this limitation, we find no evidence that rural households in China may be utilizing credit cards in a costlier manner than their urban counterparts. This finding is not in line with our initial hypothesis that rural consumers are less likely to pay their credit card bills in full.

Together, our results might be an indication that factors inherent to living in a rural area such as less access to financial institutions or ability to pay for purchases using credit cards prevent consumers from obtaining a credit card. Even so, those few rural consumers that overcome those barriers in order to obtain a credit card are not less responsible in using credit than urban consumer with easier access and more opportunities to use credit.

Policymakers and credit card issuers such as financial institutions need to be aware of the hurdles encountered by rural households in accessing and utilizing their credit cards such as lack of internet providers. If the goal is to increase the adoption of credit cards across all urban and rural areas in China, more efforts should be placed in helping rural business to start accepting credit cards as a form of payment. Additionally, more banking locations in rural areas would facilitate consumers' familiarity and possibly demand for credit cards. A similar increase in scale of banking locations with recognition has been recently proposed by Xing et al. (2015). Some international experiences may be learned. For example, the Indian government issued a special credit card to help farmers for their agricultural production and life (Godara et al., 2014; Sharma, 2016).

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Table 1: Urban-Rural comparisons by income, expenditure and Engel's Coefficient.

Year	Per Capita Disposable Income (yuan)			Per Capita Consumption Expenditure (yuan)			Engel's Coefficient (%)	
	Urban	Rural	Urban/ Rural	Urban	Rural	Urban/ Rural	Urban	Rural
2015	31790.3	10772	2.95	21392.4	9222.6	2.32		
2014	29381.0	9892.0	2.97	19968.1	8382.6	2.38		
2013	26955.1	8895.9	3.03	18487.5	7485.1	2.47	35.0	37.7
2012	24564.7	7916.6	3.10	16674.3	5908.0	2.82	36.2	39.3
2011	21809.8	6977.3	3.13	15160.9	5221.1	2.90	36.3	40.4
2010	19109.4	5919.0	3.23	13471.8	4381.8	3.07	35.7	41.1
2009	17174.7	5153.2	3.33	12264.6	3993.5	3.07	36.5	41.0
2008	15780.8	4760.6	3.31	11242.9	3660.7	3.07	37.9	43.7
2007	13785.8	4140.4	3.33	9997.5	3223.85	3.10	36.3	43.1
2006	11759.5	3587.3	3.28	8696.6	2829.0	3.07	35.8	43.0
2005	10493.0	3254.9	3.22	7942.9	2134.6	3.72	36.7	45.5
2004	9421.6	2936.4	3.21	7182.1	1754.5	4.09	37.7	47.2
2003	8472.2	2622.2	3.23	6510.9	1576.6	4.13	37.1	45.6
2002	7702.8	2475.6	3.11	6029.9	1467.6	4.11	37.7	46.2
2001	6859.6	2366.4	2.90	5309.0	1364.1	3.89	38.2	47.7
2000	6280.0	2253.4	2.79	4998.0	1284.7	3.89	39.4	49.1

Note: The data comes from "China Statistical Yearbook". We cannot find data on "Per Capita Disposable Income of Rural Households" in the yearbook, then we use "Per Capita Net Income of Rural Households" instead.

Table 2: Distribution of the first preferred borrower.

First Preferred Borrower	Urban Households (%)	Rural Households (%)
Relatives	49.33	60.21
Friends	5.18	5.45
Bank	25.59	20.21
Non-bank financial institutions	0.33	0.1
Private lending institutions or individuals	0.33	0.94
Won't borrow in any case	18.84	12.59
total	100	100

Note: Author calculations with data from the Chinese Family Panel Studies (CFPS) 2008-2014, issued by the Institute of Social Science Survey (ISSS), Peking University.

TABLE 3: Demographic, Financial, Risk Attitude, and Expectation Variables by Credit Card Holding

	No Credit Card		Have Credit Card		Test Stat
	mean	sd	mean	sd	p-value
<i>Educational attainment</i>					
No High School	0.54	0.50	0.34	0.47	0.000
High/Vocational School	0.17	0.37	0.25	0.43	0.000
College	0.12	0.32	0.23	0.42	0.000
Graduate School	0.17	0.38	0.18	0.39	0.218
<i>Age</i>					
30 or younger	0.31	0.46	0.32	0.47	0.207
31 to 50	0.31	0.46	0.40	0.49	0.000
51 to 65	0.22	0.42	0.20	0.40	0.064
Over 65	0.16	0.37	0.081	0.27	0.000
<i>Family composition</i>					
No. of family members	4.18	1.72	3.89	1.26	0.000
Male = 1	0.51	0.50	0.53	0.50	0.122
Married male	0.32	0.47	0.32	0.47	0.799
Married female	0.32	0.47	0.32	0.47	0.828
<i>Economic Status</i>					
Expenditure (1,000)	0.18	0.25	0.28	0.22	0.000
Answer wage question	0.15	0.36	0.25	0.43	0.000
Currently employed	0.69	0.46	0.70	0.46	0.487
Has checking account	0.54	0.50	0.71	0.45	0.000
<i>Risk Attitude</i>					
Investment choices	2.19	1.24	2.67	1.21	0.000
Obey traffic laws	0.088	0.28	0.073	0.26	0.018
Wear seatbelts	0.29	0.45	0.21	0.41	0.000
<i>Economic expectations</i>					
Interest rate	3.68	0.71	3.76	0.74	0.000
Consumer product prices	4.07	0.87	4.21	0.87	0.000
Housing prices	3.85	0.96	3.77	0.98	0.002
N	27,713		1,611		29,324

Author calculations with data from the 2011 China Household Finance Survey.

Notes: P-value is 2-tail t-test of the hypothesis that means of credit card users and non-users are equal by each characteristic listed, assuming unequal variances in the two groups.

Table 4: Demographic, Financial, Risk Attitude, and Expectation Variables by not Paying Credit Card in Full (Revolvers), Urban and Rural Differences

	Urban		Rural		p-value
	mean	sd	mean	sd	
<i>Educational attainment</i>					
No High School	0.27	0.44	0.66	0.47	0.000
High/Vocational School	0.22	0.42	0.088	0.28	0.000
College	0.31	0.46	0.095	0.29	0.000
Graduate School	0.19	0.40	0.15	0.36	0.257
<i>Age</i>					
30 or younger	0.30	0.46	0.33	0.47	0.530
31 to 50	0.39	0.49	0.39	0.49	0.893
51 to 65	0.22	0.41	0.16	0.37	0.129
Over 65	0.096	0.29	0.12	0.32	0.496
<i>Family composition</i>					
No. of family members	3.71	1.10	4.61	1.43	0.000
Male = 1	0.50	0.50	0.55	0.50	0.307
Married male	0.32	0.47	0.31	0.46	0.828
Married female	0.33	0.47	0.32	0.47	0.906
<i>Economic status</i>					
Expenditure (1,000)	0.37	0.78	0.23	0.23	0.001
Answer wage question	0.27	0.45	0.12	0.32	0.000
Currently employed	0.68	0.47	0.81	0.39	0.001
Has checking account	0.77	0.42	0.61	0.49	0.001
<i>Risk attitude</i>					
Investment choices	2.82	1.25	2.34	1.11	0.000
Obey traffic laws	0.037	0.19	0.051	0.22	0.489
Wear seatbelts	0.18	0.39	0.23	0.42	0.287
<i>Economic expectations</i>					
Interest rate	3.77	0.69	3.72	0.71	0.420
Consumer product prices	4.33	0.78	4.23	0.84	0.237
Housing prices	3.72	1.02	3.95	0.96	0.016
N	490		137		

Author calculations with data from the 2011 China Household Finance Survey.

TABLE 5: Logistic Regression, Odds Ratio of Having a Credit Card

	(1) Have a Credit Card	(2) Have a Credit Card	(3) Have a Credit Card	(4) Have a Credit Card Urban Only	(5) Have a Credit Card Rural Only
	Odd Ratio	Odd Ratio	Odd Ratio	Odd Ratio	Odd Ratio
Rural = 1	0.3723^{***}	0.5148^{***}	0.5616^{***}	-	-
<i>Educational attainment</i> (ref: no high school)					
High/vocational school		1.7495 ^{***}	1.6398 ^{***}	1.6776 ^{***}	1.3811 [*]
College		1.9861 ^{***}	1.7558 ^{***}	1.7901 ^{***}	1.7130 [*]
Graduate school		1.6586 ^{***}	1.4874 ^{**}	1.5734 ^{**}	1.1588
<i>Age (ref: over 65)</i>					
30 or younger		1.8963 ^{***}	1.6838 ^{***}	1.7360 ^{**}	1.4409
31 to 50		1.9297 ^{***}	1.7308 ^{***}	1.7847 ^{***}	1.4038
51 to 65		1.5907 ^{***}	1.5144 ^{***}	1.6683 ^{***}	1.0462
<i>Family composition</i>					
No. of family members		0.9480	0.9558	0.9455	0.9730
Male = 1		1.1854 [*]	1.1946 [*]	1.2035	1.1125
Married male		1.1413	1.0893	1.0815	1.0966
Married female		1.3818 ^{**}	1.3135 [*]	1.3085 [*]	1.2874
<i>Economic Status</i>					
Expenditure (1,000)		1.6922	1.4184	1.2388	9.1109 ^{***}
Answer wage question		1.1870	1.0942	1.0280	1.4137
Currently employed		0.9208	0.9213	0.9711	0.9080
Has checking account			1.4556 ^{**}	1.3650 [*]	1.4816
<i>Risk Attitude</i>					
Investment choices			1.2305 ^{***}	1.1911 ^{***}	1.3249 ^{***}
Obey traffic laws			0.9851	1.1312	0.6944
Wear seatbelts			0.7544 [*]	0.7167 [*]	0.9584
<i>Economic expectations</i>					
Interest rate			1.0120	0.9974	1.0334
Consumer product prices			1.1912 [*]	1.1341	1.3970
Housing prices			0.8968	0.8943	0.9233
Observations	29,324	29,324	29,324	16,755	12,569

Exponentiated coefficients

Author calculations with data from the 2011 China Household Finance Survey

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

TABLE 6: Logistic Regression, Odds Ratio of Paying Credit Card Balance in Full

	(1) Pay in Full Odds Ratio	(2) Pay in Full Odds Ratio	(3) Pay in Full Odds Ratio
Rural	0.6609**	0.8013	0.8031
<i>Educational attainment</i> (ref: no high school)			
High/vocational school		1.3479	1.3499
College		1.2474	1.2457
Graduate school		1.3100	1.3999
<i>Age (ref: over 65)</i>			
30 or younger		1.2843	1.2148
31 to 50		1.3971	1.4222
51 to 65		1.1794	1.1669
<i>Family composition</i>			
No. of family members		0.9441	0.9316
Male = 1		1.0621	1.0260
Married male		1.0231	1.0093
Married female		1.1044	1.0555
<i>Economic Status</i>			
Expenditure (1,000)		4.5584***	3.7318**
Answer wage question		0.9807	0.9918
Currently employed		1.0208	0.9918
Has checking account			0.8933
<i>Risk Attitude</i>			
Investment choices			1.1210*
Obey traffic laws			2.3187**
Wear seatbelts			1.1133
<i>Economic expectations</i>			
Interest rate			1.1373
Consumer product prices			0.8173*
Housing prices			0.9329
Observations	1,611	1,611	1,611

Exponentiated coefficients

Author calculations with data from the 2011 China Household Finance Survey

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$