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INFORMAL LOANS IN RUSSIA: CREDIT RATIONING OR BORROWER'S CHOICE?

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This paper examines the strategies of Russian households for choosing either the formal or informal banking sector as a source of credit. We aim to learn why households refuse to become clients of a bank and prefer to instead raise funds by borrowing from individuals – friends, colleagues, relatives, and other private parties. We use the results of "Monitoring the Financial Behavior of the Population" (2009-2010), a national survey of Russian households. Our results suggest that a household's choice of the informal credit market is based not only on economic factors, but also on some institutional ones, including financial literacy, trust in the banking sector, and credit discipline. We show that choosing the informal market is explained by a lack of financial literacy, measured by mathematical competence and home accounting, as well as by a lack of trust in the banking sector as a whole. Borrowers from private parties demonstrate a higher degree of credit discipline: those who believe that repaying a loan is not obligatory are less frequently among informal borrowers and they choose the bank credit market. Our findings, however, are still in line with credit rationing theory. We show that better financial conditions reduce a household's probability to use both formal and informal credit markets in favor of pure bank borrowing.

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Introduction

According to inter-temporal choice theory – one of the fundamental theories of economic agent financial behavior – and, in particular, life-cycle theory (see, for instance, Modigliani, Brumberg, 1954), households smooth their consumption over time by a combination of saving and borrowing funds under certain conditions during certain stages of their life. Numerous empirical studies are devoted to the problem of defining the determinants of a household's choice of a saving strategy.[4] However, only a few studies examine the factors influencing a household's choice of a borrowing strategy, and even less are devoted to analyzing this question in developing economies[5]. The latter, however, provides no answer to the key issue of how a household chooses its source of borrowed funds when they have banks and non-banking lenders at their disposal.

When considering the case of Russia – an economy in transition – three stylized facts should be emphasized. First of all, in Russia we observe a rapidly growing market for retail bank loans, including consumer loans. Over the past two years (since post-crisis 2010) the volume of retail bank lending increased steadily after a slight reduction in 2008-2009 (see figure 1). By the end of 2012, the total volume of loans was more than twice that of 2009, amounting to 637.7 billion rubles.
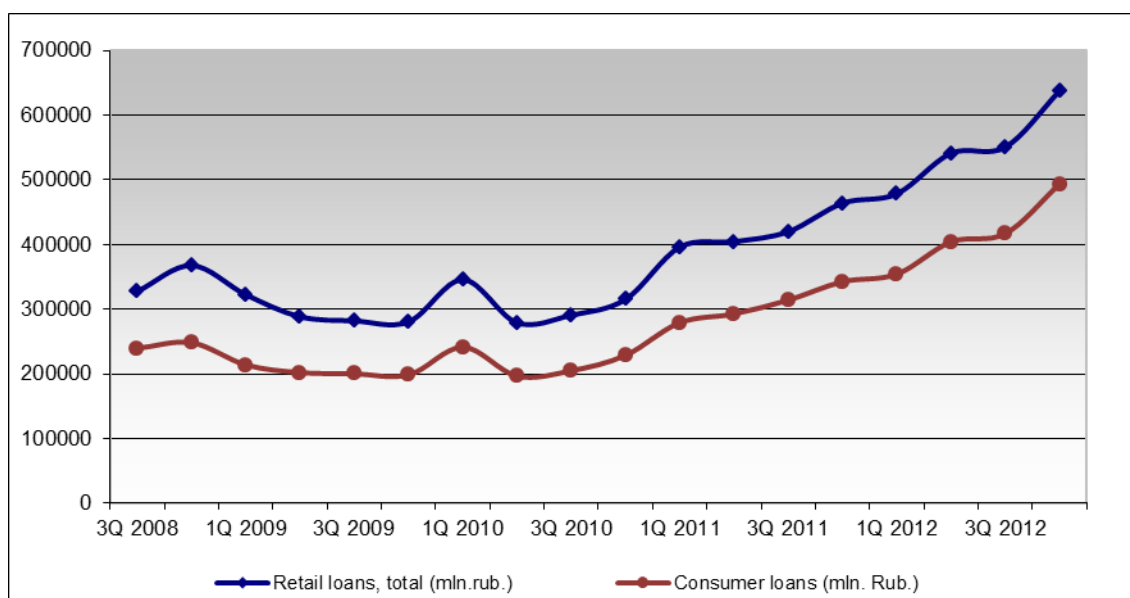

Figure 1. Retail loans (mln. rub.)

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[4] See Semenova (2011) for examples.
[5] Ibid

Consumer loans make up a large proportion of retail loans in Russia. In contrast to large and long-term loans, such as mortgages, these loans can be used in a variety of ways and have different terms and maturities, making it the most popular type of bank credit in Russia. The proportion of consumer loans amounts to 67-75% of total retail loans and has been quite stable over time. High consumer demand makes the coexistence of banks and non-banking lenders possible in this segment of the credit market. Indeed, both can provide types of loans.

Secondly, although the Russian banking sector is now falling after the consumer lending boom, in pursuit of increasing market share and assets sometimes banks seem to choose quantity at the expense of quality, which can lead to serious problems with their credit portfolio.

The ratio of non-performing loans, which declined during the post-crisis years after a peak of 19.7 percent in the 3rd quarter of 2009, began to rise in 2012. By the end of the year, the total portfolio quality had slightly improved, but the NPL ratio for consumer loans, which exceeds the average ratio (with the exception of mid-2010), continued to increase, amounting to approximately 10.5 percent by the end of the year (see figure 2).
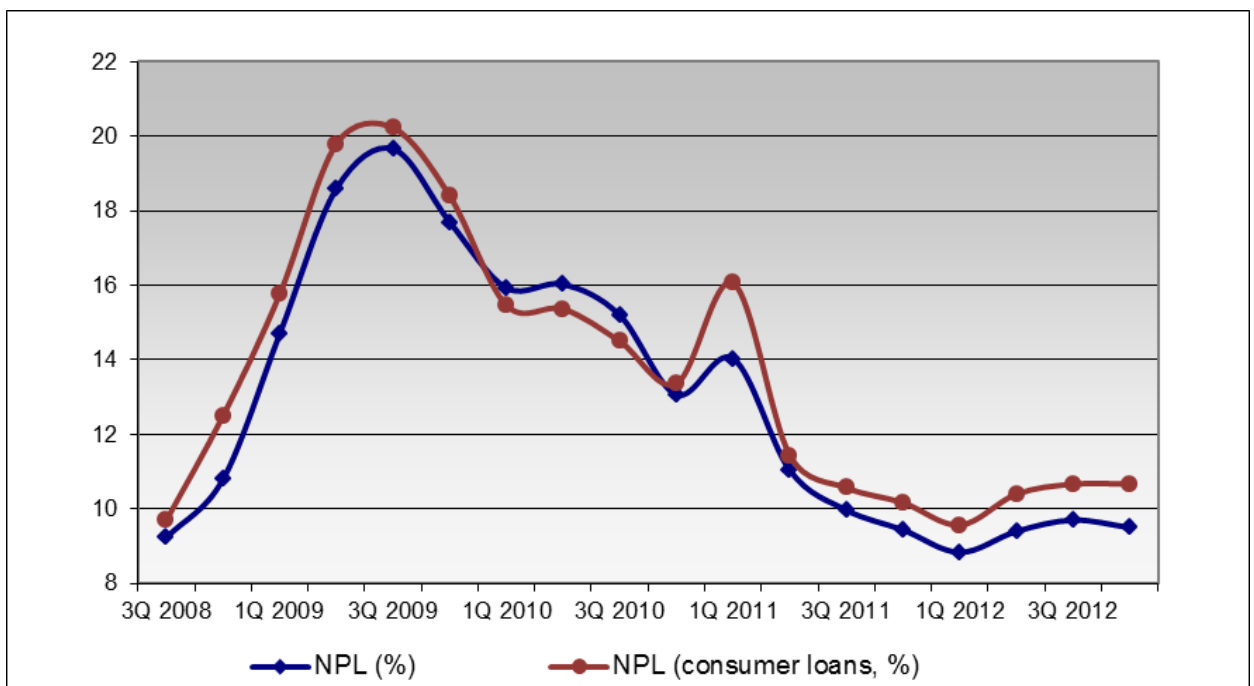

Figure 2. Share of non-performing loans (%)

Thirdly, the results of a recent national household survey conducted by the HSE and WCIOM[6] show that approximately 14 percent of Russian households – or more than a half of all borrowers – borrow money from the informal sector, namely from private individuals such as relatives, friends, colleagues, etc.[7] What are the reasons behind this choice? Perhaps credit rationing in the form of banks refusing to grant loans? Or maybe it is the personal decision of the borrowers themselves? The answer is not that obvious given the increasing share of non-performing loans. It seems that bank selection procedures are not so strict that credit rationing would fully explain the predominance of borrowing from informal lenders.

To be precise, there are at least three possible reasons as to why a borrower is in the informal market:

a) credit rationing, which is when, considering its current and expected future financial position, a household either receives just partial funding from a bank, or gets refused altogether;

b) other supply-side constraints, varying from the inconvenience of bank locations to the underdevelopment of the financial sector as a whole and high costs of entering the market;

c) borrower's choice, including financial literacy and credit discipline (an informal loan is a less sophisticated product, and often times there are no collateral requirement or formal sanctions for non-repayment), unwillingness to be a formal debtor, a desire to remain in the "shadow", and so on.

In this paper we shed some light on which of these factors cause Russian households to avoid becoming bank clients and prefer to borrow from individuals – friends, colleagues, relatives, and other private parties – when deciding to raise borrowed funds.

The rest of the paper is organized as follows: in Section II we review the existing studies that provide possible explanations for a borrower's choice, while Section III describes our data and methodology, followed by Section IV, which discuss our results, and section V, which concludes.

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[6] Sources: "Monitoring the Financial Behavior of the Population", conducted by National Research University Higher School of Economics, Moscow, and WCIOM, 1.10.2009-30.10.2010. http://sophist.hse.ru/db/oprview.shtml?en=0&ID_S=2443

[7] The informal sector can also include non-banking financial companies, such as micro-financial organizations. However, we do not take them into account when analyzing borrower incentives, because, according to analyst assessments, at the beginning of 2012 the total volume of micro-loans equaled about 30 billion rubles. This proportion is insignificant compared to all lending (less than 5%), and very specific as it involves providing loans to the most unreliable customer at high interest rates. There can be only one reason for households to take a microfinance loan at a very high percent – the refusal of all other lenders to provide the loan.

Literature

There are two main sources of borrowed funds examined in the academic literature: banks and the alternative-banking sector. The latter includes any legal financial activities outside formal financial regulation. This can be professional and non-professional lenders, private financial firms, pawnshops, households, etc. The key feature is the fact that most of these lenders do not raise capital and use their own savings (Chandravarkar, 1987). Due to the specifics of loans granted by private parties, we identify these loans in a separate category of informal loans, separating this type of credit relationship from all others in the alternative banking sector[8]. From an economic point of view, this type of credit is the most desirable for households as it does not involve commissions, collateral, and, in some cases, sanctions for non-repayment of the loan. However, households do not always have the desire to borrow from private parties, because of the priority to maintain good relations with friends and family, which may be damaged in case of problems with repayment. Also, this may not be possible due to a lack of savings among family and friends. However, this type of lending is a significant source of funds. For example, a household survey in Canada shows that households turn to the following methods to raise additional funds needed in the current period: 28 percent of households borrow from relatives and friends, 26 percent reduce their current consumption, 10 percent use credit cards or take payment advances, 7 percent use the funds within the credit line or overdraft, and 32 percent choose other means of financing, such as turning to alternative banking services or selling assets (Arrowsmith, Pignal, 2010). According to the results of a similar study conducted in the USA, 51.9 percent of respondents replied positively to having borrowed from friends and family over the past 12 months, additionally acknowledging that most of the debts were not returned in time (Mckean, Lessem, Bax, 2005).

What factors might influence the decision to become a borrower? For example, studies conducted in Italy show that the probability of entering the credit market is in direct relation with the household's size and level of income. The greatest demand for loans is among households consisting of young and well-educated individuals, who are at an early stage of their careers and do not have sufficient funds to purchase expensive assets, but who do have higher expected future incomes (Magri, Pico, Rampazzi, 2011). Besides, the demand for credit increases with the age of the head of the household, up to a maximum of 30 years, and then decreases. Also,

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[8] The activities of the informal financial sector are systematically organized to obtain profit and this is called the alternative-banking sector.

another important factor affecting the decision to take a loan is a household's net wealth, equaling the value of personal assets minus liabilities. A growth in household wealth stimulates it to finance its own expenses itself, and the demand for credit decreases at a rate that is higher when wealth is more liquid. On the other hand, the change over to a higher standard of living can lead to a significant increase in needs, and, consequently, to an increase in demand for credit. The impact of net wealth is determined by the marginal rate of substitution between current and future consumption, which is the ratio between the marginal utility of consumption in two periods. The marginal rate of substitution is the highest at low levels of wealth and income, declines as it approaches the average standard of living, and then increases again (Magri, 2002).

There are a few studies analyzing the characteristics of households who choose the informal banking sector. Their results suggest that the parameters of informal loans prove that this source of funds addresses poor households. Small amounts and maturities of loans imply the use of credit to cover immediate needs (food, clothing, and medical care), where a lack of funds at times of relevant need occurs only in low-income households. For example, a survey of households in 1994 in Madagascar shows that most loans in the informal sector (62.5 percent) were used for current consumption, and a significant number of credits in the formal sector (57.4 percent) were used for purchasing equipment and machinery (Zeller M. 1994).

And there is the quite understandable opinion that informal lenders who offer such unfavorable conditions for themselves are only pursuing the goal of altruism – they are sincerely takeing care of the borrower's well-being. Lee and Persson (2012) built two models of moral hazard for formal and family finance in which a family lender differs from a formal lender only in that he has an altruistic relationship. The model suggests that informal loans have social ramifications that discourage risk taking, because borrowers are averse to imposing risks on family and friends. Thus, the probability to lose the social relationship with a lender imposes strong incentives and significantly reduces the problem of moral hazard.

There are several reasons for households to decide to not borrow from the traditional banking sector and to choose an alternative way of financing: refusal of banks (credit rationing due to a negative credit history, lack of collateral, low income, or unemployment), lack of financial literacy (an inability to calculate the costs and benefits, and difficulties in understanding banking products and in communicating with bank employees), unfavorable terms (banks cannot offer low rates to borrowers with a high risk), and inconvenient bank locations (for example, a lack of offices in rural areas) (Caskey,1994; Mckean, Lessem, Bax, 2005; Berry, 2005; Barr, Dokko, Keys, 2009). In addition to these reasons, the reluctance to use banking services is explained by the willingness to stay "in the shadow", based on a number of fears: a previous lender may use

the debtor's savings, a former husband may require aliments, the tax office may find out about a debtor's income, and migration authorities may become aware of illegal migration (Caskey, Duran, Solo, 2006).

Some reasons may be connected to ones for the overall use of the financial services of banks. The number of individuals in the world who do not use banking services is about 56 percent. This percentage varies for highly developed and less-developed countries – between 17 percent and 64 percent, respectively. In Africa and South Asia, only 12 to 22 percent of the population have a financial relationship with a bank, but in OECD countries this proportion amounts to 91 percent (Beck, Demirgüç-Kunt, Maksimovic, 2004). What caused these differences? For example, to open a bank account in Cameroon, one needs $700, which exceeds the country's GDP per capita (Beck, Demirgüç-Kunt, Martinez Peria, 2007). Thus, the problem has a completely different character in less-developed countries. Barriers to access are determined by the backwardness of the entire financial sector and high costs for entry on the supply side. These conclusions are confirmed by the results of similar studies dealing with countries with economies in transition. A cross-country analysis based on surveys of the EBRD and the World Bank Life in Transition Survey (LITS) in 2006 and 2010 shows significant variation: in Estonia and Slovenia more than 90 percent of the population use banking services, while in Armenia, Georgia, Tajikistan, and Uzbekistan this proportion is less than 5 percent (Beck, Brown, 2011).

However, not only economic factors, such as household income and related rationing, serve as a reason against using bank loans and preferring informal loans. The behavior of people in real life is very different from generally accepted economic models of rational decision-making in intertemporal choice. For example, the concept of bounded rationality offers an explanation for the fact that households are ready to pay more to get a fast and convenient loan (Ramsay, 2000). We can find some confirmation in a study examining the behavior of low-income households in Detroit in the USA, where markets for alternative financial services have experienced rapid growth, being popular even among those who actively use traditional banking services. Respondents explain that these loans are "easier to obtain and use" (Barr, Dokko, Keys B, 2009). Indeed, the alternative market works faster, so it has a certain advantage (Tatom, Godsted, 2011).

Financial illiteracy is one major cause of the bounded rationality of households. Since the 1990s this problem has become most acute: The interest in financial education is increasing due to the complexity of financial products and the increased responsibility for one's own financial security. Evidence suggests that households with a higher level of financial literacy rarely turn to the alternative banking sector. Barnes, Miller, and Verma (2011) show that it is much easier for

such households to make decisions within formal financial markets, which confirms the link shown in laboratory tests between one's level of knowledge and financial behavior (paying bills, planning budgets, etc.). They measure the level of financial literacy by using a test with questions concerning the management of income and expenses, the ability to calculate the benefits and costs of deposits and loans, knowledge of banking products, and tax laws. It did not require any special knowledge; it was sufficient for one to manage his or her finances competently. Households obtained financial education from various sources: personal experience, friends and family, the media, university courses, and employers. Respondents who showed the best test results, largely increased financial literacy using their own experience (Hilgert, Hogarth, Beverly, 2003).

Beck and Brown (2011), analyzing the results of household surveys in transition economies, demonstrate statistically significant characteristics of potential borrowers who use the traditional banking sector. These borrowers live in urban areas, have higher earnings and good health, and natively speak the official language. Other factors include not being of the Muslim religion, having a larger household, having one or more children, the head of the household having a higher education, and his or her formal employment. The converse is also true, the less of these features a household has, the more often it will turn to the informal sector.

Finally, there are several explanations for the coexistence of the formal and informal financial sector. On the one hand, the latter solves problems caused by underdevelopment and other restrictions of the former one. On the other hand, it can be considered as an autonomous sector, which has a comparative advantage in low transaction costs and easy monitoring. Transaction costs there are much lower because of a lack of regulators demanding documents, no need for multiple personnel, facilities, and equipment, and fewer problems with collateral, which is either not available or highly liquid (Chandravarkar, 1987).

However, the informal and traditional financial sectors are not perfect substitutes since they offer different credit arrangements. A study conducted in Malawi (Diagne, 1999) shows that setting a fixed time for fulfilling obligations in the informal sector sharply reduced demand for credit, and thus increased the amount of loans in the formal sector.

In Russia, borrowing from relatives and friends seems to be the preferred way to obtain necessary funds. According to a 2002 survey of households, these loans were used by 41.5 percent of respondents, while only 17 percent of respondents turned to banks (Strebkov, 2005). The most important factor in getting a loan from relatives is the ability to repay the loan. Respondents also emphasized trust in a potential borrower as another important factor.

Individuals who are between 31 and 44 years of age demonstrate the greatest demand for loans, which may be explained by stable earnings and confidence in their future.

A strategy that implies "living within one's means" is a matter of pride for some individuals, so they basically refuse to borrow from anyone. But there is another type of household that is so poor that they do not take loans, realizing that, whatever the amount is, they are not able to repay such debts (Strebkov, 2005).

According to "Parents and Children, Men and Women in Family and Society", a survey of Russian households conducted in the summer of 2007, 35 percent of households took a loan from a bank in the last three years, which, as we have seen, is more than twice the results of 2002. This can be explained by the increased availability of credit. Loans in the banking sector are most common among the residents of urban areas and households related to the top two quintiles of income (corrected for local costs of living). As for socio-demographic characteristics, bank loans are demanded by families with children − households of a working age that are in the middle of its life-cycle. Almost half of able-bodied families have some experience in borrowing from a bank (Ibragimova, 2008).

Finally, the results of the most recent surveys of households − conducted during the recent financial crisis − show that about 14 percent of Russian households are currently using bank loans, or about 55 percent of all borrowers[9].

The paper with is the closest to ours is Klapper, Lusardi, Panos (2012), separating bank and informal loans in Russia and showing, that financial literacy influences differently the household choice of either of them. They show that during the financial crisis financial literacy stimulates participating in financial markets and reduces borrowing from informal sector. We are different in several ways. First of all, we use the different survey analyze the period after financial crisis, which reduces at least to degree the panic moods, which can influence the survey responses. Secondly, we measure differently the financial literacy. We use a set of simpler questions, which allows for fewer missing observations. We choose the questions to cover not only calculation abilities and financial knowledge, but also understanding of riskiness and accounting patterns. We also do not construct the financial literacy index to see, whether these aspects of financial literacy influence the household choice differently. Thirdly, we go beyond the financial literacy as a determinant of a source of borrowed funds, adding credit discipline and trust to banking sector as another couple of important factors.

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[9] "Monitoring the Financial Behavior of the Population", conducted by the National Research University Higher School of Economics in Moscow and WCIOM in 2009-2010

Methodology and Data

We use the results of "Monitoring the Financial Behavior of the Population", a survey of households conducted by the HSE and WCIOM in 2009-2010. This is a unique dataset that provides the opportunity to study the financial strategies of Russian households, including their experiences with using different financial services, their attitudes toward banks, financial literacy, and financial culture. The survey includes respondents over 18 years old and the number of respondents is 1600, selected using national multistage stratified random sampling.

We only use the data on borrowers – including borrowers from any sources – as the purpose of this study is to identify the factors influencing a household's choice of informal credit – meaning borrowing from relatives, friends, acquaintances, colleagues, and other private parties – instead of bank loans as a source of debt funds. We suggest that the choice of a specified borrower strategy may depend not only on economic factors (determined, for example, by the refusal of a bank to provide a loan), but also on a range of institutional ones, including financial literacy, credit discipline, trust to banks, and so on.

We examine the choice in two steps. At the first step we estimate a Probit regression with a binary dependent variable (*debt_private*), which is equal to 1 if a household *i* owes money to private parties and 0 if a household *i* borrows solely from banks.

At the second step we widen our understanding of borrower's choice and look separately at the how those who borrow solely from banks are different from those who borrow solely from private parties and those who use a mixture of the two options. We estimate a Multinomial logit model with a dependent variable equal to 0 for pure bank borrowers, 1 for pure private sector borrowers and 2 for households owing to both banks and private parties (*multi*).

The basic specifications of both models include only economic factors:

$$debt\_private_i = f_1(Rationing_i, City\_type_i, Controls_i)$$
$$multi_i = g_1(Rationing_i, City\_type_i, Controls_i) \tag{1}$$

We introduce the characteristics to a rationing hypothesis (*Rationing*): current income and expectations for future income. As a proxy for other supply-side restrictions, we include the size of the settlement where a household is based (measured by population, *City_type*). We also control for standard socio-demographic factors, specifically gender, education, and household size (*Controls*)

Table 1 describes in detail the dependent variables, economic factors, and control variables included in the basic model.

Table 1. Basic models

Variable	Obs	Mean	Std.Dev.	Min	Max	Descriptions/survey question
Dependent variables						
debt_private	405	0.548	0.498	0	1	Do you (or your family members) have any debt to private persons (relatives, friends, acquaintances, colleagues, etc.)? 1 – yes 0 - no
multi	282	0.571	0.829	0	2	Q1: Which financial services do you currently use? Q2: Do you (or your family members) have any debt to private persons (relatives, friends, acquaintances, colleagues, etc.)? 0 – q1: consumer loan, mortgage, credit card, q2 – no 1 – q2: yes, q1 – no loan products 2 - q1: consumer loan, mortgage, credit card, q2 – yes
Economic factors						
mat_sit	410	2.949	0.989	1	6	How would you characterize the financial situation of your family? 1. It is barely enough to meet the family's food requirements 2. Earn money for food, but there is a serious problem with buying clothes 3. Can earn money for food and clothing, but it would be hard to buy a TV, a fridge, or a washing machine 4. Can earn money for food and clothing, and can afford to buy a TV, a fridge, or a washing machine 5. Can buy everything on earned money, except things like an expensive car, house, vacation home, or apartment 6. Have no money problem, can afford to buy an expensive car, house, vacation home, or apartment
welfare_in_year	335	2.012	0.709	1	3	How do you expect your welfare to change in a year? 1- Decrease 2- No change 3- Increase
city_type	410	1.724	0.898	1	4	Type of settlement (population) 1- Up to 50 thousand. 2- From 50 thousand to 1 million 3- 1 million and more. 4- Moscow or St. Petersburg
Controls						
gender	410	0.439	0.497	0	1	1 – female; 0 - male
size	410	2.978	1.261	1	9	Number of household members
edu	410	0.210	0.408	0	1	1 – a respondent with higher education; 0 - otherwise

We assume that the better a household's current (*mat_sit*) and expected (*welfare_in_year*) financial situation, the more likely it will be to borrow from a bank and the less likely it will be to face the problem of rationing. The same is true for households living in big cities (*city_type*), where banks can be accessed more easily. Moreover, we also assume that the smaller the town,

the closer social networks are and thus the higher the probability is to prefer the informal credit market.

Next, we extend the basic model, including one by one various institutional factors that may influence the decision of a borrower. The extended model is as follows:

$$debt\_private_i = f_2\left(Institutional_i, Rationing_i, City\_type_i, Controls_i\right)$$

$$multi_i = g_2\left(Institutional_i, Rationing_i, City\_type_i, Controls_i\right)$$

(2)

Existing literature suggests that financial literacy is one of the most important factors influencing the choice of financial strategy and, in particular, the choice of a borrower's strategy. Financial literacy increases the probability that one will chose to borrow from a bank because it makes it easier to understand the intricacies of banking products.

However, estimating the degree of financial literacy is not a simple task. A respondents opinion of his or her financial literacy may differ from his or her actual knowledge and skills. Therefore, we estimate financial literacy in two ways: directly, by using a respondent's point of view, and indirectly, by using their answers to questions that describe various aspects of financial literacy, such as financial knowledge, mathematical skills, and attitudes toward risk.

Variables measuring financial literacy are presented in Table 2. The variable *fin_literacy* shows a subjective assessment of the level of financial literacy for respondents. On average, respondents think that they have "satisfactory" knowledge in the field of finance. But we also look at indirect indicators of financial literacy. First of all, we introduce a proxy for mathematical skills and knowledge of percentage calculation (*per_cents)*. About two-thirds of respondents possess such financial knowledge. Secondly, accounting for household income and expenses characterizes a respondent's attention to personal finances and control of its volatility (*acc*). On average, accounting is not kept by respondents who report that they have some general view of financial flows. Finally, perceptions of risk can be revealed using a household's understanding of the "risk-return" dilemma. We introduce a measure of understanding the positive correlation between risk and return in financial markets (*risk*). About one-third of respondents have a more in-depth financial expertise in terms of risk perception.

Besides financial literacy, other factors, such as credit discipline, trust in financial institutions, and attitudes to owing money to a bank, can influence the decision to take a loan from private parties. Variables describing each of them are presented in Table 3.

Table 2. Financial literacy

Variable	Obs	Mean	Std.Dev.	Min.	Max.	Descriptions/survey question
fin_literacy	410	2.756	0.909	1	5	Do you think you are a financially literate person? Range: from 1 (lack of knowledge) to 5 (excellent knowledge and skills)
per_cents	410	0.641	0.480	0	1	Two shops made discounts on the same TV, which initially cost 10,000 rubles. In one shop price is reduced by 1,500 rubles, and in another - by 10 percent. In which shop is this television currently cheaper? 1 – in the shop where price decreased by 1,500 rubles 0 – another answer
acc	399	0.283	0.451	0	1	Do you or someone in your family keep a written record of income and expenses? 0 - Records are not kept and we do not know how much money we received and spent for the month *or* Records are not kept, but generally are known. 1 - Records are maintained, but not all *or* Records are maintained and everything fixed
risk	410	0.393	0.489	0	1	Choose the right statement: In financial markets… 1 – the lower the risk, the lower the yield 0 – another answer

Table 3. Other institutional factors defining borrower's strategy

Variable	Obs	Mean	Std.Dev.	Min.	Max.	Descriptions/survey question
return_credit	365	0.827	0.378	0	1	Do you agree that it is not necessary to pay back a bank loan if there are strong reasons? 1-yes 0 -no
trust_to_fin	354	1.890	0.518	1	3	Please compare your current attitude to banks, insurers, and other financial companies to your attitude of such in the summer of 2008. Has it changed? 1 – have become less trusting of them 2 – attitude have not change 3 - have become more trusting of them
no_debt_please	343	0.192	0.395	0	1	Psychological factor reflecting reluctance to borrow: Why do you not you borrow? 1 – "I do not want to live in debt" 0 – another answer

The variable *return_credit* characterizes the credit discipline of a borrower. When asked whether it is acceptable to not repay a loan, a large percentage of the answers were positive, pointing to an absence of credit discipline. We assume that these borrowers are less likely to apply for bank credit because sanctions in the informal market in case of a failure to fulfill obligations may seem less rigid. Lack of confidence in financial institutions (*trust_to_fin*) may have a positive impact on the probability that one will choosing to borrow from individuals. We assume that the higher the degree of confidence in financial institutions, the less likely it is that

one will turn to private individuals for a loan. Another factor determining one's refusal to take out a bank loan is a desire to live within his or her means and to rely on his or her own strength (*no_debt_please*). Households giving this answer to the related question about reasons to not take out a bank loan, amounting to approximately one third of respondents, would rather turn to the informal market and avoid the official status of being debtor.

Results

Borrowing from the informal market

Table 4 represents the results of both the basic (column 1) and extended (columns 2-8) Probit models. Financial literacy, which we expected to play a crucial role in choosing a source of credit, is virtually insignificant, if only subjective measures are considered. Subjective financial literacy reduces the probability that one will use the informal credit market only for respondents who believe to have excellent (5 out of 5) knowledge and skills in the field of finance. For these respondents, the hypothesis about the positive impact of financial literacy on the probability to avoid informal loans is confirmed. This effect has economic significance (appx. 44 percent), but is unstable over specifications. However, such a high assessment of personal financial competence is rather infrequent, as the proportion of these respondents is only 1.5 percent.

This result can be explained by the fact that under financial literacy respondents can understand different types of knowledge, skills, and experience, which do not have the same effect on the probability that one will turn to the informal sector. These features are covered by the results of models with different proxies for objective financial literacy. They show that being able to calculate percentages and related practical mathematical skills influence the choice of borrowers. Respondents who can correctly calculate percentages are less likely to choose the informal sector (the corresponding effect is about 11-13 percent). The component that represents accounting and systematization of financial cash flows within a household is also statistically significant, but the significance is unstable over specifications. The effect, however, is still quite large, accounting for another 12-percent reduction in the probability that one will borrow from private parties.

We also estimated the influence of a borrower's credit discipline, which implicitly characterizes a respondent's willingness to fulfill their financial obligations. The results are quite surprising: households that do not believe one must meet financial obligations or repay loans on

time are less likely to borrow from private lenders and, thus, more likely to be among bank clients. The reduction in the probability that one will turn to the informal sector is about 15-18 percent.

Table 4. Results of Probit estimation: average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		0.00103					0.127	
		(0.104)					(0.119)	
fin_literacy=3		-0.0512					0.0732	
		(0.0957)					(0.108)	
fin_literacy=4		-0.0616					-0.0102	
		(0.109)					(0.121)	
fin_literacy=5		-0.441*					-0.383	
		(0.266)					(0.284)	
per_cents			-0.111**					-0.126*
			(0.0555)					(0.0643)
acc			-0.0668					-0.119*
			(0.0595)					(0.0666)
risk			0.0710					0.0924
			(0.0546)					(0.0629)
return_credit				-0.146*			-0.177**	-0.184**
				(0.0784)			(0.0848)	(0.0854)
trust_to_fin=2					0.0175		-0.0156	0.0120
					(0.0722)		(0.0737)	(0.0768)
trust_to_fin=3					-0.0916		-0.213	-0.189
					(0.117)		(0.134)	(0.132)
no_debt_please						0.0288	-0.00572	0.0258
						(0.0720)	(0.0779)	(0.0761)
mat_sit=2	-0.509***	-0.505***	-0.486***	-0.490***	-0.491***	-0.533***	-0.510***	-0.448***
	(0.167)	(0.165)	(0.167)	(0.170)	(0.168)	(0.169)	(0.176)	(0.173)
mat_sit=3	-0.597***	-0.585***	-0.583***	-0.551***	-0.568***	-0.616***	-0.533***	-0.499***
	(0.163)	(0.162)	(0.164)	(0.166)	(0.162)	(0.164)	(0.171)	(0.166)
mat_sit=4	-0.634***	-0.613***	-0.598***	-0.607***	-0.605***	-0.610***	-0.529***	-0.493***
	(0.170)	(0.169)	(0.170)	(0.172)	(0.169)	(0.173)	(0.184)	(0.177)
mat_sit=5	-0.350*	-0.296	-0.332*	-0.294	-0.313	-0.297	-0.0768	-0.131
	(0.195)	(0.193)	(0.194)	(0.201)	(0.198)	(0.203)	(0.215)	(0.216)
welfare_in_year =2	-0.0698	-0.0639	-0.0761	-0.0518	-0.0470	-0.0692	-0.0267	-0.0254
	(0.0674)	(0.0669)	(0.0661)	(0.0716)	(0.0700)	(0.0740)	(0.0786)	(0.0779)
welfare_in_year =3	-0.130*	-0.122	-0.117	-0.141*	-0.0902	-0.118	-0.0674	-0.0422
	(0.0783)	(0.0775)	(0.0780)	(0.0833)	(0.0818)	(0.0884)	(0.0933)	(0.0936)
city_type=2	0.0372	0.0390	0.0656	0.0541	0.0470	0.0437	0.121*	0.140**
	(0.0572)	(0.0572)	(0.0575)	(0.0603)	(0.0610)	(0.0628)	(0.0680)	(0.0681)
city_type=3	0.171	0.176	0.201	0.226*	0.212	0.216*	0.287**	0.292**
	(0.123)	(0.121)	(0.130)	(0.130)	(0.130)	(0.130)	(0.125)	(0.121)
city_type=4	0.0279	0.0293	-0.00185	0.107	0.0479	0.00925	0.151	0.0997
	(0.103)	(0.101)	(0.102)	(0.107)	(0.106)	(0.109)	(0.110)	(0.108)
gender	-0.0192	-0.0174	-0.0379	-0.0271	-0.0361	0.0401	0.0318	0.0312
	(0.0526)	(0.0526)	(0.0534)	(0.0551)	(0.0551)	(0.0579)	(0.0602)	(0.0629)
size	-0.0188	-0.0152	-0.0163	-0.0212	-0.0246	-0.0333	-0.0494*	-0.0592**
	(0.0227)	(0.0229)	(0.0232)	(0.0235)	(0.0237)	(0.0261)	(0.0275)	(0.0270)
edu	-0.00577	0.00142	0.00585	0.00571	0.0114	0.0231	0.0762	0.0886
	(0.0633)	(0.0635)	(0.0628)	(0.0647)	(0.0660)	(0.0689)	(0.0727)	(0.0716)
Observations	330	330	324	298	297	276	229	226
χ^2	31.04*	33.51*	36.76*	33.09*	30.31*	31.97*	46.03*	47.52*
p-value	0.00194	0.00633	0.00137	0.00165	0.00691	0.00242	0.000797	0.000301

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

This could be due to the fact that households are more concerned about their reputation in the eyes of private creditors, such as friends and family, and not about building good credit history. This effect is non-trivial and suggests that formal economic sanctions – namely bank ones – are less significant than informal sanctions. However, this result corresponds with the theoretical predictions of Lee and Persson (2012).

Our results show that confidence in financial institutions is an insignificant factor. Thus, we reject the obvious hypothesis that the decision to turn to individuals depends on trust in financial institutions as a whole. The psychological factor is also insignificant; our hypothesis that the reluctance to become a debtor stimulates potential borrowers to choose the informal sector has no confirmation.

Finally, we consider economic factors that control for credit rationing. A better financial situation decreases the probability that one will turn to the informal market. The related effects are large, but decrease over the categories: we observe a 45-53 percent decrease when jumping from the poorest individuals to the next class up, but moving yet one more class up adds only 5-11 percent to that effect, while moving up yet again adds less than 4 percent.

This result confirms the rationing theory, and shows that households with a higher income are more likely to finance their needs by bank loans, as a bank's decision, based exclusively on economic characteristics, will be positive. The only exception is the last category – the highest level of well-being, where a household is able to easily buy a car or an apartment: obtained effects are smaller and not always significant. However, these households amount only to 0.5 percent of the sample. A household's future financial situation matters only if the improvement is expected, and this reduces the probability that one will borrow in the informal market by 13-14 percent. This effect is unstable, however.

Also we found a positive and unstable influence from the type of settlement on the choice of a borrower. Both the supply-side restriction hypothesis and the hypothesis that it is most common to take loans from private parties in small towns were not confirmed.

Pure and Mixed Strategies

Tables 5 and 6 show the results for the Multinomial Logit, with table 5 comparing pure bank borrowers with pure informal borrowers, and table 6 comparing pure bank borrowers with those who borrow from both banks and private parties.

Table 5. Results of Multinomial Logit (multi=1): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		-0.0242					0.0266	
		(0.0701)					(0.0840)	
fin_literacy=3		-0.139*					-0.0532	
		(0.0721)					(0.0871)	
fin_literacy=4		-0.121					-0.181	
		(0.0935)					(0.121)	
fin_literacy=5		-1.388***					-1.300***	
		(0.226)					(0.278)	
per_cents			-0.0927**					-0.0745
			(0.0438)					(0.0454)
acc			-0.0843					-1.241***
			(0.0535)					(0.243)
risk			0.0331					0.0238
			(0.0460)					(0.0447)
return_credit				0.0446			0.0522	0.0815
				(0.0663)			(0.0716)	(0.0770)
trust_to_fin=2					-0.0685		-0.109*	-0.0988*
					(0.0545)		(0.0566)	(0.0528)
trust_to_fin=3					-1.451***		-1.114***	-1.127***
					(0.237)		(0.229)	(0.241)
no_debt_please						-0.0267	-0.0595	-0.0254
						(0.0580)	(0.0631)	(0.0654)
mat_sit=2	-0.115	-0.117	-0.107	-0.0642	-0.104	-0.171*	-0.127	-0.0510
	(0.096)	(0.0833)	(0.0929)	(0.111)	(0.0984)	(0.0945)	(0.0950)	(0.0914)
mat_sit=3	-0.179*	-0.171**	-0.175*	-0.116	-0.159*	-0.167**	-0.0527	-0.00763
	(0.093)	(0.0792)	(0.0909)	(0.111)	(0.0941)	(0.0841)	(0.0906)	(0.0887)
mat_sit=4	-0.128	-0.0963	-0.111	-0.115	-0.121	-0.136	-0.0212	0.00995
	(0.096)	(0.0841)	(0.0960)	(0.111)	(0.101)	(0.0891)	(0.0975)	(0.0922)
mat_sit=5	-0.0033	0.0507	0.0195	0.0518	0.00679	-0.0105	0.167	0.176
	(0.110)	(0.0984)	(0.102)	(0.124)	(0.115)	(0.106)	(0.140)	(0.115)
welfare_in_year=2	0.0367	0.0520	0.0261	0.0763	0.0540	0.0215	0.00733	-0.00398
	(0.059)	(0.0540)	(0.0582)	(0.0648)	(0.0643)	(0.0580)	(0.0621)	(0.0577)
welfare_in_year=3	-0.0037	0.0213	-0.00259	0.0296	0.0362	0.00410	0.0489	0.0834
	(0.070)	(0.0648)	(0.0701)	(0.0748)	(0.0769)	(0.0679)	(0.0715)	(0.0636)
city_type=2	-0.0167	-0.0144	0.0157	-0.0246	-0.0404	0.0216	0.0425	0.0453
	(0.046)	(0.0467)	(0.0438)	(0.0483)	(0.0509)	(0.0484)	(0.0524)	(0.0471)
city_type=3	-0.0299	0.00839	-0.0218	-0.000202	-0.00259	0.0399	0.0690	0.0921
	(0.114)	(0.0996)	(0.113)	(0.105)	(0.101)	(0.104)	(0.0612)	(0.0600)
city_type=4	-0.0873	-0.0703	-0.104	-0.0394	-0.109	-0.0753	-0.0376	-0.0829
	(0.096)	(0.0935)	(0.0991)	(0.0831)	(0.103)	(0.0876)	(0.0698)	(0.0810)
gender	-0.00025	-0.000752	-0.00602	-0.00505	-0.0375	0.0331	-0.00407	0.0181
	(0.042)	(0.0414)	(0.0431)	(0.0433)	(0.0462)	(0.0438)	(0.0438)	(0.0445)
size	-0.0238	-0.0249	-0.0240	-0.0156	-0.0272	-0.0408	-0.0427	-0.0442*
	(0.023)	(0.0245)	(0.0208)	(0.0228)	(0.0238)	(0.0258)	(0.0266)	(0.0241)
edu	-0.0529	-0.0480	-0.0293	-0.0323	-0.0411	-0.0163	0.0127	0.0402
	(0.055)	(0.0582)	(0.0528)	(0.0525)	(0.0611)	(0.0518)	(0.0544)	(0.0501)
Observations	228	228	224	206	205	197	162	159
χ^2	42.37**	557.0*	48.17**	43.55**	1721*	41.95**	1536*	1022*
p-value	0.0117	0	0.0191	0.0169	0	0.0248	0	0

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

These results show that credit rationing is a serious reason for using the informal credit market if the borrower prefers a mixed strategy. For these households, both the current and expected future financial situations prove to be statistically and economically significant. In addition to the results similar to those from the Probit model, we observe the significance of a stable future financial position (neither improving nor getting worse) and the number of

household members (which is also information that the bank can ask for). The former reduces the probability that one will borrow informally in addition to borrowing from a bank, while the latter increases this probability. Both factors support the rationing hypothesis: these borrowers seem to be partially rationed by banks or prefer to not borrow solely from banks. On the contrary, pure informal borrowers owe to private parties for reasons other than being rationed.

Table 6. Results of Multinomial Logit (multi=2): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		0.105					0.247	
		(0.148)					(0.169)	
fin_literacy=3		0.191					0.236	
		(0.138)					(0.171)	
fin_literacy=4		0.120					0.176	
		(0.145)					(0.180)	
fin_literacy=5		0.398					0.431	
		(0.243)					(0.287)	
per_cents			0.0221					-0.00641
			(0.0617)					(0.0732)
acc			0.0134					0.402***
			(0.0613)					(0.103)
risk			0.0259					-0.0111
			(0.0627)					(0.0781)
return_credit				-0.150**			-0.174**	-0.200**
				(0.0762)			(0.0842)	(0.0883)
trust_to_fin=2					0.0901		0.0471	0.0724
					(0.0811)		(0.0871)	(0.0862)
trust_to_fin=3					0.473***		0.278*	0.317**
					(0.133)		(0.161)	(0.159)
no_debt_please						-0.0110	0.0127	0.0392
						(0.0719)	(0.0807)	(0.0792)
mat_sit=2	-0.437***	-0.414***	-0.449***	-0.458***	-0.407***	-0.410***	-0.411**	-0.422***
	(0.155)	(0.160)	(0.163)	(0.163)	(0.151)	(0.158)	(0.187)	(0.162)
mat_sit=3	-0.461***	-0.451***	-0.472***	-0.456***	-0.451***	-0.485***	-0.493***	-0.496***
	(0.147)	(0.153)	(0.158)	(0.154)	(0.139)	(0.149)	(0.172)	(0.147)
mat_sit=4	-0.481***	-0.482***	-0.480***	-0.467***	-0.440***	-0.454***	-0.429**	-0.424***
	(0.155)	(0.161)	(0.165)	(0.159)	(0.146)	(0.161)	(0.180)	(0.157)
mat_sit=5	-0.303*	-0.298	-0.318*	-0.304	-0.250	-0.288	-0.184	-0.221
	(0.176)	(0.185)	(0.185)	(0.186)	(0.171)	(0.183)	(0.218)	(0.192)
welfare_in_year=2	-0.104	-0.111*	-0.107	-0.122*	-0.0926	-0.100	-0.0903	-0.0748
	(0.0642)	(0.0656)	(0.0658)	(0.0695)	(0.0707)	(0.0678)	(0.0809)	(0.0798)
welfare_in_year=3	-0.181**	-0.192**	-0.177**	-0.229**	-0.182*	-0.123	-0.185*	-0.176
	(0.0876)	(0.0864)	(0.0883)	(0.0940)	(0.0973)	(0.0927)	(0.105)	(0.112)
city_type=2	0.0797	0.0836	0.0748	0.103	0.119*	0.0777	0.150*	0.136*
	(0.0612)	(0.0619)	(0.0629)	(0.0644)	(0.0653)	(0.0682)	(0.0766)	(0.0778)
city_type=3	0.175	0.141	0.195	0.195*	0.174	0.221**	0.209*	0.211
	(0.109)	(0.106)	(0.122)	(0.114)	(0.126)	(0.111)	(0.124)	(0.136)
city_type=4	0.0775	0.0735	0.0706	0.143	0.103	0.0758	0.203*	0.196
	(0.122)	(0.124)	(0.124)	(0.124)	(0.124)	(0.120)	(0.108)	(0.120)
gender	-0.00875	-0.00134	-0.0169	-0.00440	0.000366	0.0262	0.0543	0.0625
	(0.0561)	(0.0561)	(0.0586)	(0.0601)	(0.0603)	(0.0576)	(0.0685)	(0.0756)
size	0.0462**	0.0464**	0.0467**	0.0409*	0.0420*	0.0382	0.0294	0.0243
	(0.0225)	(0.0224)	(0.0227)	(0.0238)	(0.0236)	(0.0261)	(0.0298)	(0.0283)
edu	0.0439	0.0454	0.0353	0.0388	0.0549	0.0596	0.0835	0.0651
	(0.0682)	(0.0669)	(0.0687)	(0.0713)	(0.0735)	(0.0694)	(0.0764)	(0.0787)
Observations	228	228	224	206	205	197	162	159
χ^2	42.37**	557.0*	48.17**	43.55**	1721*	41.95**	1536*	1022*
p-value	0.0117	0	0.0191	0.0169	0	0.0248	0	0

*** p<0.01, ** p<0.05, * p<0.1

Higher levels of financial literacy and trust in the banking sector can attract one to borrow from a bank. The effects for financial literacy are virtually the same as those we received from the Probit models. The subjective financial literacy matters only for those who claim the highest degree of expertise – they will avoid informal borrowing for sure. Mathematical skills and percentage calculation, as well as home accounting, also reduce the probability that one can borrow informally, yet these effects are not stable across specifications. This effect, however, does not work for those who choose between mixed- and pure bank-borrowing strategies.

The new significant factor is increased trust in the banking sector. If one's confidence increased after the financial crisis of 2008, then the household will definitely ignore the informal market. This result is non-trivial, as the theory predicts that it is the depositors – not the borrowers – who should care about bank stability. However, given the fact that in Russia banks seem to be opaque and the regulators even had to introduce additional requirements aimed at increased disclosures in consumer loan contracts (real interest rates, all additional fees, repayment schedules, etc.), the trust may be related not to stability, but to beliefs in bank transparency and "good intentions".

Surprisingly, the effect is quite the opposite for those who prefer a mixed strategy in favor of pure bank borrowing. The probability to be in this category is 30-50 percent higher if the borrower says that his trust in banks as a whole increased after the crisis.

As for credit discipline, it does not play an important role for pure informal borrowers. Our results suggest that "undisciplined" borrowers come to the market for bank loans from the group of the clients with a mixed strategy. For those of them who feel that it is not obligatory to repay the loan, the probability to be among pure bank clients – as opposed to mixed ones – is 15-20 percent higher.

Robustness Checks

To ensure that our results are sufficiently stable, we perform two types of robustness checks. First of all, we replace the proxy for a household's financial position by another measure, namely the household's self-esteem. We introduce the variable *est_welfare* varying from 1 (very bad financial situation) to 5 (very good financial situation). The results of estimations for both the Probit and Multinomial Logit regressions are presented in tables A1-A3 in the Appendix. They confirm the rationing hypothesis, showing that those who owe to private parties demonstrate a worse financial situation, even if this situation is self-estimated. The same is true for financial

literacy: self-estimation does not have much influence, but better mathematical skills and home accounting reduces the probability that one will borrow from the informal market. The credit-discipline effect is, however, very unstable in this model specification. As for comparing choices between pure and mixed strategies, the results confirm that rationing influences one's choosing a mixed strategy, and the choice of a pure private borrowing strategy is determined by financial literacy and trust in the banking sector.

Secondly, we reduce our sample by excluding households with the lowest incomes (*mat_sit*<3). These households are rationed by banks with the highest level of probability, so they may not have any choice as to the source of their debt financing. Sample restrictions allow us to avoid sample selection bias (if there is any), concentrating on those who are more likely to choose the market to borrow from themselves and who are less dependent on credit rationing problems. Tables A4-A6 in the Appendix show the results of this estimation. Not all models proved to be statistically significant, but those that are again provide support for our initial results. They show evidence for rationing, especially in choosing a mixed loan portfolio. Financial literacy affects the choice between pure strategies, while the absence of credit discipline increases the probability that one will borrow from a bank.

Conclusion

This paper offers a possible explanation as to why the growing Russian market for consumer loans demonstrates high rates of non-performing loans and why simultaneously numerous borrowers are left aside and use the informal market, specifically borrow from private individuals like relatives, friends, colleagues, and so on.

An analysis of data obtained from the survey of Russian households in 2010 suggests that the informal sector, being an important source of borrowed funds, can compete with banks when households make borrowing decisions. Credit rationing is important: households turning to private lenders are not just those who cannot demonstrate a quality and stable financial situation and thus were denied by banks. However, this works only for those who combine bank credit with informal loans, so they are partially rationed. For pure informal lenders, it is not the economic factors that are important.

The data shows that, besides economic factors, other factors such as financial literacy and credit discipline are also significant when choosing a borrower's strategy. Bank clients are more often those households that show a high degree of financial literacy. But subjective financial

literacy – namely a household's self-esteem – does not explain much. Choosing a to borrow from a bank is explained by objective measures, like mathematical competence and home accounting.

Another important result that may serve – at least partly – as an explanation for pure quality of bank consumer loans is that those who owe to private parties demonstrate a higher degree of credit discipline. Those who believe that repaying a loan is not obligatory are less frequently found among informal borrowers, as they instead choose the bank credit market.

Finally, trust in the banking sector, undermined by the recent financial crisis, proves to influence a borrower's choice of the credit market. We show that an increase in this confidence can stimulate pure informal borrowers to enter the formal loan market.

Thus, our results show that, at least to some degree, economic characteristics of borrowers explain the low quality of bank consumer loans. A significant number of borrowers choose the informal market because of a lack of financial literacy and trust in the banking sector. On the other hand, those who do not show significant credit discipline prefer pure bank borrowing.

References

1. Arrowsmith S. Pignal J. (2010) "Initial Findings from the 2009 Canadian Financial Capability Survey", Statistics Canada, Task Force on Financial Literacy

2. Barnes Z., Miller, C., Verma N. (2011) "Save, spend, or pay down debt: financial literacy and decision among Low-income households", Center for Financial Security CFS Research Brief (FLRC 11-3)

3. Barr M.S., Dokko J., Keys B. (2009) "And Banking for All?" Finance and Economics Discussion Series 2009-34, Federal Reserve Board

4. Beck T., Brown M. (2011) "Which Households Use Banks? Evidence from the Transition Economies", Banque centrale du Luxembourg Cahier D'Études Working Paper №50

5. Beck T., Demirgüç-Kunt A., Maksimovic V. (2004) "Bank competition and access to finance: international evidence", *Journal of Money, Credit and Banking* 36, 627-48

6. Beck T., Demirgüç-Kunt A., Martinez Peria M. S. (2007). "Reaching out: Access to and Use of Banking Services Across Countries", *Journal of Financial Economics* 85 (1): 234-266.

7. Berry C. 2005 "To Bank or Not to Bank? A Survey of Low-Income Households," in Building Assets, Building Credit: Creating Wealth in Low-Income Communities, Nicolas

P. Retsinas and Eric S. Belsky, eds. Washington, D.C.: Brookings Institution Press pp. 47-70

8. Caskey J. (1994) "Fringe banking" published by Russel Sage Foundation, New York , pp.68-84

9. Caskey J., Duran C. R., Solo T. M. (2006) "The Urban Unbanked in Mexico and the United States." Policy Research Working Paper №3835. World Bank, Washington, DC.

10. Chandravarkar, A. (1987). 'The Informal Financial Sector in Developing Countries: Analysis, Evidence and Policy Implication', SEACEN Occasional Paper 2

11. Diagne A. (1999) "Determinants of Household Access to and Participation in Formal and Informal Credit Markets in Malawi", FCND Discussion Paper №67

12. Hilgert M., Hogarth J. M., Beverly S. (2003) "Household Financial Management: The Connection between Knowledge and Behavior", 89 Fed. Res. Bull. 309

13. Klapper L., Lusardi A., Panos G.A. (2012) "Financial Literacy and the Financial Crisis" NBER Working Paper №17930

14. Lee S., Persson P. (2012) "Financing from Family and Friends", NYU Stern Working Paper FIN-12-007

15. Magri S. (2002) "Italian households' debt: determinants of demand and supply", Banca d'Italia, Temi di discussione, №454

16. Magri S. Pico R. Rampazzi C. (2011) "Which households use consumer credit in Europe?", Questioni di Economia e Finanza n. 100, Banca d'Italia.

17. Mckean L. Lessem S. Bax E. 2005 "Money management by low-income households: earning, spending, saving, and accessing financial services", Chicago: Center for impact research

18. Modigliani F., Brumberg R. (1954) "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data." In Kurihara, K. K., ed., Post-Keynesian Economics, New Brunswick: Rutgers University Press, 388-436

19. Ramsay I. (2000) "Access to Credit in the Alternative Consumer Credit Market". Paper prepared for the Office of Consumer Affairs, Industry Canada and the Ministry of the Attorney General, British Columbia

20. Semenova M. (2011) "Save or borrow – what determines Russian households' financial strategies?" BOFIT Discussion Paper №28-2011, Bank of Finland Institute for Economies in Transition

21. Strebkov D. (2005) "Household Borrowing Behavior in Russia", State University-Higher School of Economics, Problems of Economic Transition, Volume 48, Number 5, pp. 22 – 48

22. Tatom J., Godsted D. (2011) "Targeting the Unbanked - Financial Literacy's Magic Bullet?", Networks Financial Institute Report 2006-NFI-02

23. Weinberg JA (2005) "Borrowing by US households", the Bank's 2005 Annual Report

24. Zeller M. (1994) "Determinants of Credit Rationing: A Study of Informal Lenders and Formal Credit Groups in Madagascar", World Development, 22(12), 1895-1907

25. Ibragimova D. (2008) "Zhizn' v kredit: arealy rasprostranenia", in Russian (Ибрагимова Д. (2008) «Жизнь в кредит: ареалы распространения», Независимый институт социальной политики, Сборник аналитических статей: Российские домохозяйства накануне финансового кризиса: доходы и финансовое поведение), p. 115-127

Appendix

Table A1. Estimation of welfare, results of Probit: average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		-0.0464					0.0491	
		(0.106)					(0.124)	
fin_literacy=3		-0.0955					0.00651	
		(0.0966)					(0.111)	
fin_literacy=4		-0.100					-0.0407	
		(0.109)					(0.125)	
fin_literacy=5		-0.449*					-0.343	
		(0.240)					(0.225)	
per_cents			-0.103*					-0.137**
			(0.0576)					(0.0657)
acc			-0.0732					-0.120*
			(0.0610)					(0.0674)
risk			0.0637					0.102
			(0.0550)					(0.0636)
return_credit				-0.121			-0.138	-0.150*
				(0.0807)			(0.0869)	(0.0869)
trust_to_fin=2					-0.0109		-0.0326	-0.0212
					(0.0710)		(0.0749)	(0.0750)
trust_to_fin=3					-0.129		-0.217	-0.211
					(0.114)		(0.134)	(0.131)
no_debt_please						0.0192	-0.00765	0.0186
						(0.0735)	(0.0804)	(0.0780)
est_welfare=2	-0.333*	-0.333*	-0.329*	-0.262	-0.280	-0.361*	-0.239	-0.252
	(0.194)	(0.191)	(0.189)	(0.203)	(0.199)	(0.193)	(0.199)	(0.196)
est_welfare =3	-0.499***	-0.496***	-0.485***	-0.430**	-0.459**	-0.536***	-0.424**	-0.431**
	(0.185)	(0.182)	(0.180)	(0.193)	(0.190)	(0.183)	(0.187)	(0.183)
est_welfare =4	-0.503**	-0.475**	-0.450**	-0.478**	-0.444**	-0.517**	-0.397*	-0.379*
	(0.201)	(0.200)	(0.201)	(0.206)	(0.211)	(0.204)	(0.211)	(0.212)
welfare_in_year=2	-0.0619	-0.0540	-0.0678	-0.0552	-0.0346	-0.0375	0.00630	0.00358
	(0.0686)	(0.0682)	(0.0676)	(0.0724)	(0.0712)	(0.0749)	(0.0801)	(0.0798)
welfare_in_year=3	-0.113	-0.105	-0.109	-0.122	-0.0768	-0.0703	-0.0248	-0.0136
	(0.0809)	(0.0801)	(0.0815)	(0.0852)	(0.0858)	(0.0887)	(0.0964)	(0.0992)
city_type=2	0.0117	0.00997	0.0441	0.0288	0.0187	0.00641	0.0559	0.0927
	(0.0579)	(0.0581)	(0.0587)	(0.0613)	(0.0617)	(0.0641)	(0.0702)	(0.0691)
city_type=3	0.121	0.130	0.160	0.170	0.168	0.199	0.273**	0.280**
	(0.123)	(0.122)	(0.130)	(0.129)	(0.130)	(0.131)	(0.132)	(0.126)
city_type=4	-0.0100	-0.0119	-0.0387	0.0713	0.00859	-0.0156	0.110	0.0587
	(0.104)	(0.102)	(0.104)	(0.111)	(0.107)	(0.112)	(0.113)	(0.115)
gender	-0.0216	-0.0196	-0.0393	-0.0212	-0.0464	0.0366	0.0249	0.0155
	(0.0533)	(0.0534)	(0.0541)	(0.0558)	(0.0557)	(0.0585)	(0.0621)	(0.0637)
size	-0.0307	-0.0264	-0.0271	-0.0313	-0.0359	-0.0383	-0.0506*	-0.0586**
	(0.0224)	(0.0228)	(0.0227)	(0.0230)	(0.0235)	(0.0259)	(0.0271)	(0.0260)
edu	0.0210	0.0346	0.0335	0.0273	0.0387	0.0492	0.0996	0.115
	(0.0646)	(0.0649)	(0.0641)	(0.0664)	(0.0665)	(0.0698)	(0.0736)	(0.0722)
Observations	327	327	321	295	294	275	228	225
χ^2	24.87	20.46	27.56	21.29	21.73	22.01	35.66	36.78
p-value	0.0517	0.0394	0.0162	0.0463	0.0597	0.0375	0.0116	0.00559

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A2. Estimation of welfare, results of Multinomial logit (multi=1): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		-0.0151					0.0358	
		(0.0759)					(0.0860)	
fin_literacy=3		-0.128*					-0.00731	
		(0.0740)					(0.0867)	
fin_literacy=4		-0.113					-0.166	
		(0.0935)					(0.122)	
fin_literacy=5		-1.302***					-1.138***	
		(0.222)					(0.253)	
per_cents			-0.0899**					-0.0682
			(0.0424)					(0.0455)
acc			-0.0978*					-1.196***
			(0.0558)					(0.217)
risk			0.0184					0.00638
			(0.0461)					(0.0526)
return_credit				0.0550			0.0994	0.119
				(0.0737)			(0.0803)	(0.0819)
trust_to_fin=2					-0.0699		-0.0915*	-0.0878*
					(0.0513)		(0.0487)	(0.0518)
trust_to_fin=3					-1.611***		-1.169***	-1.198***
					(0.259)		(0.252)	(0.239)
no_debt_please						-0.0373	-0.0920	-0.0552
						(0.0623)	(0.0691)	(0.0854)
est_welfare=2	-0.272**	-0.293**	-0.255**	-0.172	-0.171	-0.315**	-0.204*	-0.160
	(0.134)	(0.118)	(0.125)	(0.131)	(0.128)	(0.133)	(0.110)	(0.106)
est_welfare =3	-0.144	-0.142	-0.108	-0.0705	-0.0497	-0.164*	-0.0515	0.0116
	(0.109)	(0.0966)	(0.102)	(0.108)	(0.105)	(0.0942)	(0.0825)	(0.0855)
est_welfare =4	-0.190	-0.160	-0.126	-0.120	-0.145	-0.178	-0.0886	-0.0686
	(0.131)	(0.119)	(0.126)	(0.128)	(0.144)	(0.116)	(0.125)	(0.137)
welfare_in_year=2	0.0299	0.0420	0.00836	0.0587	0.0431	0.0349	0.0635	0.0208
	(0.0600)	(0.0565)	(0.0613)	(0.0681)	(0.0648)	(0.0601)	(0.0667)	(0.0598)
welfare_in_year=3	0.0138	0.0268	0.00805	0.0374	0.0571	0.0361	0.127	0.128*
	(0.0708)	(0.0679)	(0.0731)	(0.0794)	(0.0762)	(0.0731)	(0.0843)	(0.0765)
city_type=2	0.000410	0.00291	0.0270	-0.00959	-0.0327	0.0306	0.0217	0.0259
	(0.0474)	(0.0473)	(0.0446)	(0.0484)	(0.0495)	(0.0475)	(0.0454)	(0.0418)
city_type=3	-0.0336	-0.0266	-0.0270	-0.00278	-0.00470	0.0241	0.0571	0.0902
	(0.0989)	(0.0812)	(0.0981)	(0.0981)	(0.0894)	(0.0857)	(0.0650)	(0.0652)
city_type=4	-0.0885	-0.0817	-0.0992	-0.0386	-0.0843	-0.0786	-0.0342	-0.0411
	(0.114)	(0.113)	(0.112)	(0.113)	(0.111)	(0.103)	(0.0923)	(0.0989)
gender	-0.0141	-0.0226	-0.0215	-0.0227	-0.0507	0.0197	-0.0280	-0.0119
	(0.0435)	(0.0441)	(0.0455)	(0.0440)	(0.0476)	(0.0461)	(0.0491)	(0.0560)
size	-0.0299	-0.0328	-0.0309	-0.0208	-0.0322	-0.0433	-0.0474*	-0.0510*
	(0.0245)	(0.0269)	(0.0232)	(0.0248)	(0.0252)	(0.0272)	(0.0278)	(0.0272)
edu	-0.0544	-0.0423	-0.0417	-0.0416	-0.0418	-0.0107	0.0342	0.0348
	(0.0561)	(0.0577)	(0.0556)	(0.0534)	(0.0627)	(0.0529)	(0.0568)	(0.0583)
Observations	227	227	223	205	204	197	162	159
χ^2	36.54	611.6	49.34	38.93	1970	46.45	1228	1994
p-value	0.0266	0	0.00766	0.0278	0	0.00391	0	0

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A3. Estimation of welfare, results of Multinomial logit (multi=2): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		0.144					0.295*	
		(0.143)					(0.170)	
fin_literacy=3		0.246*					0.269*	
		(0.129)					(0.159)	
fin_literacy=4		0.202					0.254	
		(0.136)					(0.169)	
fin_literacy=5		0.412**					0.410*	
		(0.184)					(0.210)	
per_cents			0.0443					-0.0173
			(0.0606)					(0.0682)
acc			0.0337					0.303***
			(0.0608)					(0.0825)
risk			-0.00762					-0.0282
			(0.0612)					(0.0751)
return_credit				-0.112			-0.129	-0.161*
				(0.0812)			(0.0840)	(0.0857)
trust_to_fin=2					0.0716		0.0275	0.0423
					(0.0767)		(0.0769)	(0.0774)
trust_to_fin=3					0.424***		0.246*	0.245*
					(0.130)		(0.128)	(0.129)
no_debt_please						-0.0241	-0.00124	-0.00230
						(0.0658)	(0.0742)	(0.0750)
est_welfare=2	-0.281*	-0.254	-0.298*	-0.286*	-0.297*	-0.253*	-0.215	-0.239
	(0.160)	(0.158)	(0.166)	(0.172)	(0.163)	(0.152)	(0.181)	(0.171)
est_welfare =3	-0.485***	-0.479***	-0.507***	-0.490***	-0.490***	-0.488***	-0.467***	-0.485***
	(0.149)	(0.147)	(0.155)	(0.157)	(0.150)	(0.142)	(0.163)	(0.150)
est_welfare =4	-0.466***	-0.468***	-0.476***	-0.477***	-0.455***	-0.425***	-0.372**	-0.364**
	(0.169)	(0.166)	(0.178)	(0.171)	(0.169)	(0.164)	(0.171)	(0.172)
welfare_in_year=2	-0.0614	-0.0745	-0.0546	-0.0848	-0.0520	-0.0446	-0.0603	-0.0290
	(0.0664)	(0.0646)	(0.0681)	(0.0707)	(0.0694)	(0.0711)	(0.0784)	(0.0802)
welfare_in_year=3	-0.132	-0.155*	-0.123	-0.166*	-0.142	-0.0653	-0.139	-0.0976
	(0.0829)	(0.0819)	(0.0839)	(0.0875)	(0.0896)	(0.0882)	(0.0976)	(0.101)
city_type=2	0.0550	0.0593	0.0522	0.0842	0.0938	0.0401	0.113	0.107
	(0.0602)	(0.0601)	(0.0610)	(0.0624)	(0.0630)	(0.0648)	(0.0692)	(0.0718)
city_type=3	0.150	0.128	0.184	0.167	0.145	0.202*	0.220*	0.238*
	(0.114)	(0.104)	(0.126)	(0.119)	(0.129)	(0.116)	(0.119)	(0.132)
city_type=4	0.0253	0.0227	0.0290	0.0721	0.0299	0.0228	0.0877	0.0932
	(0.111)	(0.118)	(0.115)	(0.121)	(0.118)	(0.111)	(0.112)	(0.119)
gender	0.00342	0.00889	0.00754	0.0148	0.00685	0.0295	0.0450	0.0642
	(0.0543)	(0.0529)	(0.0578)	(0.0570)	(0.0574)	(0.0565)	(0.0630)	(0.0719)
size	0.0410*	0.0434**	0.0411*	0.0364	0.0357	0.0359	0.0310	0.0179
	(0.0212)	(0.0199)	(0.0211)	(0.0223)	(0.0218)	(0.0234)	(0.0237)	(0.0256)
edu	0.0745	0.0687	0.0674	0.0700	0.0850	0.0853	0.101	0.108
	(0.0605)	(0.0602)	(0.0618)	(0.0626)	(0.0642)	(0.0606)	(0.0671)	(0.0683)
Observations	227	227	223	205	204	197	162	159
χ^2	36.54	611.6	49.34	38.93	1970	46.45	1228	1994
p-value	0.0266	0	0.00766	0.0278	0	0.00391	0	0

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A4. Rich households, results of Probit: average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		-0.00529					0.0848	
		(0.138)					(0.154)	
fin_literacy=3		-0.0664					0.0174	
		(0.124)					(0.132)	
fin_literacy=4		-0.0265					-0.0516	
		(0.140)					(0.151)	
fin_literacy=5		-0.486*					-0.503*	
		(0.280)					(0.292)	
per_cents			-0.106					-0.121
			(0.0675)					(0.0770)
acc			-0.0604					-0.148*
			(0.0712)					(0.0803)
risk			0.0766					0.103
			(0.0647)					(0.0732)
return_credit				-0.214**			-0.259**	-0.280***
				(0.0966)			(0.105)	(0.105)
trust_to_fin=2					0.0374		-0.00505	0.0381
					(0.0941)		(0.0970)	(0.100)
trust_to_fin=3					-0.0819		-0.210	-0.177
					(0.132)		(0.150)	(0.142)
no_debt_please						0.0137	-0.0405	0.0133
						(0.0851)	(0.0915)	(0.0894)
mat_sit=3	-0.268**	-0.310***	-0.277**	-0.281**	-0.279**	-0.341***	-0.491***	-0.400***
	(0.114)	(0.111)	(0.111)	(0.119)	(0.116)	(0.121)	(0.127)	(0.136)
mat_sit=4	-0.305**	-0.340***	-0.289**	-0.332***	-0.312**	-0.337***	-0.479***	-0.387***
	(0.121)	(0.118)	(0.119)	(0.126)	(0.126)	(0.128)	(0.137)	(0.145)
welfare_in_year=2	-0.0930	-0.0761	-0.104	-0.0613	-0.0935	-0.0694	-0.0283	-0.0332
	(0.0901)	(0.0897)	(0.0887)	(0.0952)	(0.0931)	(0.102)	(0.108)	(0.106)
welfare_in_year=3	-0.162	-0.144	-0.147	-0.171*	-0.136	-0.129	-0.0590	-0.0319
	(0.0990)	(0.0983)	(0.0974)	(0.104)	(0.104)	(0.113)	(0.118)	(0.117)
city_type=2	0.0535	0.0557	0.0813	0.0886	0.0637	0.0571	0.141*	0.176**
	(0.0697)	(0.0703)	(0.0696)	(0.0727)	(0.0738)	(0.0770)	(0.0828)	(0.0817)
city_type=3	0.179	0.174	0.222	0.273	0.266*	0.218	0.360**	0.372**
	(0.159)	(0.156)	(0.173)	(0.166)	(0.161)	(0.175)	(0.170)	(0.160)
city_type=4	0.0224	0.0282	-0.00595	0.102	0.0499	0.0255	0.152	0.119
	(0.119)	(0.117)	(0.119)	(0.117)	(0.123)	(0.125)	(0.122)	(0.121)
gender	-0.0368	-0.0311	-0.0487	-0.0514	-0.0676	0.0289	0.00907	0.0164
	(0.0648)	(0.0649)	(0.0653)	(0.0665)	(0.0677)	(0.0705)	(0.0727)	(0.0740)
size	0.00175	0.00633	0.00889	0.00399	-0.00491	-0.00496	-0.0219	-0.0328
	(0.0277)	(0.0282)	(0.0282)	(0.0288)	(0.0293)	(0.0324)	(0.0358)	(0.0349)
edu	-0.0306	-0.0319	-0.0246	-0.0330	-0.00888	-0.0258	0.00565	0.0292
	(0.0759)	(0.0756)	(0.0759)	(0.0772)	(0.0791)	(0.0846)	(0.0887)	(0.0893)
Observations	240	240	234	217	215	201	166	163
χ^2	9.875	14.32	14.83	16.13	12.64	9.930	31.16	29.55
p-value	0.452	0.426	0.318	0.136	0.396	0.537	0.0276	0.0298

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A5. Rich households, results of Multinomial logit (multi=1): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		0.0647					0.0190	
		(0.0986)					(0.0959)	
fin_literacy=3		-0.0653					-0.0646	
		(0.101)					(0.0945)	
fin_literacy=4		-0.0393					-0.165	
		(0.126)					(0.139)	
fin_literacy=5		-1.305***					-1.410***	
		(0.273)					(0.331)	
per_cents			-0.0844*					-0.102*
			(0.0482)					(0.0566)
acc			-0.0813					-1.274***
			(0.0581)					(0.279)
risk			0.0600					0.0491
			(0.0478)					(0.0496)
return_credit				0.0496			0.0210	0.0228
				(0.0849)			(0.0773)	(0.0752)
trust_to_fin=2					-0.0856		-0.0957	-0.119
					(0.0630)		(0.0685)	(0.0799)
trust_to_fin=3					-1.346***		-1.230***	-1.166***
					(0.264)		(0.264)	(0.284)
no_debt_please						-0.0190	-0.0399	0.00460
						(0.0699)	(0.0662)	(0.0833)
mat_sit=3	-0.168**	-0.200***	-0.187***	-0.165**	-0.151**	-0.164**	-0.225**	-0.190***
	(0.0687)	(0.0720)	(0.0639)	(0.0688)	(0.0689)	(0.0765)	(0.0992)	(0.0657)
mat_sit=4	-0.125*	-0.138**	-0.126**	-0.169**	-0.120	-0.133*	-0.198*	-0.172**
	(0.0669)	(0.0701)	(0.0610)	(0.0717)	(0.0729)	(0.0710)	(0.102)	(0.0832)
welfare_in_year=2	-0.00780	0.0266	-0.0172	0.0333	-0.0195	0.0133	0.0215	-0.000113
	(0.0644)	(0.0578)	(0.0597)	(0.0697)	(0.0688)	(0.0764)	(0.0834)	(0.0688)
welfare_in_year=3	-0.0284	0.0151	-0.00745	-0.00386	0.00609	-0.00124	0.0833	0.112
	(0.0750)	(0.0695)	(0.0674)	(0.0785)	(0.0859)	(0.0836)	(0.0906)	(0.0857)
city_type=2	0.000838	0.0184	0.0283	-0.0191	-0.0234	0.0249	0.0273	0.0240
	(0.0527)	(0.0529)	(0.0477)	(0.0573)	(0.0583)	(0.0602)	(0.0713)	(0.0561)
city_type=3	0.0693	0.0815	0.0797	0.0774	0.117	0.110	0.101	0.120
	(0.109)	(0.0873)	(0.112)	(0.103)	(0.0934)	(0.111)	(0.0719)	(0.0750)
city_type=4	-0.0764	-0.0589	-0.0916	-0.0405	-0.121	-0.0788	-0.0724	-0.157
	(0.0917)	(0.0909)	(0.0895)	(0.0800)	(0.106)	(0.0923)	(0.0829)	(0.122)
gender	-0.00385	-0.00950	0.000427	-0.00765	-0.0322	0.0292	0.0101	0.0409
	(0.0446)	(0.0467)	(0.0461)	(0.0469)	(0.0462)	(0.0473)	(0.0471)	(0.0488)
size	-0.0207	-0.0247	-0.0174	-0.0126	-0.0201	-0.0347	-0.0439	-0.0383
	(0.0275)	(0.0293)	(0.0254)	(0.0269)	(0.0277)	(0.0323)	(0.0363)	(0.0255)
edu	-0.00598	-0.0145	0.00585	0.00583	0.0327	0.0221	0.0381	0.0823
	(0.0533)	(0.0565)	(0.0498)	(0.0545)	(0.0550)	(0.0555)	(0.0651)	(0.0572)
Observations	175	175	171	158	156	150	123	120
χ^2	24.99	648.5	34.75	29.44	1656	27.92	1488	654.7
p-value	0.202	0	0.117	0.133	0	0.178	0	0

*** p<0.01, ** p<0.05, * p<0.1

Table A6. Rich households, results of Multinomial logit (multi=2): average marginal effects (s.e. in parentheses)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
fin_literacy=2		0.00162					0.155	
		(0.146)					(0.150)	
fin_literacy=3		0.0755					0.128	
		(0.128)					(0.143)	
fin_literacy=4		0.0289					0.0552	
		(0.143)					(0.159)	
fin_literacy=5		0.244					0.299	
		(0.249)					(0.260)	
per_cents			0.0531					0.0351
			(0.0717)					(0.0794)
acc			0.0356					0.411***
			(0.0677)					(0.124)
risk			-0.0218					-0.0809
			(0.0661)					(0.0821)
return_credit				-0.180**			-0.231***	-0.252***
				(0.0859)			(0.0846)	(0.0824)
trust_to_fin=2					0.172		0.0926	0.208**
					(0.116)		(0.105)	(0.105)
trust_to_fin=3					0.487***		0.367**	0.433**
					(0.138)		(0.157)	(0.173)
no_debt_please						-0.0936	-0.0852	-0.0543
						(0.0985)	(0.0901)	(0.0957)
mat_sit=3	-0.167*	-0.171*	-0.161*	-0.157	-0.214**	-0.188*	-0.295**	-0.294**
	(0.0978)	(0.100)	(0.0951)	(0.115)	(0.0973)	(0.101)	(0.135)	(0.118)
mat_sit=4	-0.177*	-0.188*	-0.160	-0.150	-0.206*	-0.154	-0.220	-0.203
	(0.106)	(0.106)	(0.105)	(0.121)	(0.105)	(0.105)	(0.137)	(0.127)
welfare_in_year=2	-0.0463	-0.0613	-0.0430	-0.0809	-0.0342	-0.00867	-0.0360	0.00409
	(0.0799)	(0.0802)	(0.0844)	(0.0841)	(0.0829)	(0.0854)	(0.0934)	(0.0976)
welfare_in_year=3	-0.194**	-0.209**	-0.199**	-0.264**	-0.217**	-0.0999	-0.185	-0.170
	(0.0979)	(0.0973)	(0.101)	(0.104)	(0.106)	(0.107)	(0.121)	(0.125)
city_type=2	0.0908	0.0828	0.0846	0.128*	0.133*	0.0782	0.180**	0.194**
	(0.0664)	(0.0685)	(0.0682)	(0.0696)	(0.0678)	(0.0747)	(0.0835)	(0.0840)
city_type=3	-0.0359	-0.0576	-0.00229	0.0301	0.00308	0.0466	0.151	0.197
	(0.189)	(0.190)	(0.205)	(0.206)	(0.215)	(0.184)	(0.201)	(0.232)
city_type=4	0.0682	0.0605	0.0755	0.129	0.115	0.0817	0.220**	0.275**
	(0.127)	(0.137)	(0.130)	(0.127)	(0.130)	(0.124)	(0.111)	(0.127)
gender	-0.0189	-0.00811	-0.0202	-0.0259	-0.0240	0.0217	0.0271	0.0494
	(0.0628)	(0.0632)	(0.0645)	(0.0660)	(0.0683)	(0.0640)	(0.0708)	(0.0807)
size	0.0562**	0.0593**	0.0561**	0.0540**	0.0481	0.0525*	0.0400	0.0347
	(0.0256)	(0.0263)	(0.0257)	(0.0265)	(0.0295)	(0.0299)	(0.0341)	(0.0312)
edu	-0.0477	-0.0396	-0.0555	-0.0608	-0.0460	-0.0506	-0.0409	-0.0754
	(0.0792)	(0.0779)	(0.0793)	(0.0811)	(0.0818)	(0.0881)	(0.0894)	(0.0873)
Observations	175	175	171	158	156	150	123	120
χ^2	24.99	648.5	34.75	29.44	1656	27.92	1488	654.7
p-value	0.202	0	0.117	0.133	0	0.178	0	0

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

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