Oxford Executive MBA
A Behavioral Finance Analysis

A Behavioral Phenomenon of Interest - The Use of Payday Loans in Russia

The dynamics of the payday loan industry in Russia are similar to those in the United States in the 2012-2013 time period (Shmeleva, 2019). The majority of payday loans are taken by women[1] to cover short term needs such as food, household goods, clothing, rent, car repairs, household repairs, medicine and other urgent daily needs. The majority of customers tend to be the "financially underserved": those in regions with limited access to traditional banks and banking products, those with lower levels of financial literacy, those who lack adequate credit history, those who have lower and more volatile household income (Shmeleva, 2019) (Shmeleva, 2019) (Shah, 2019) (Pew Charitable Trusts, 2013) (Pew Charitable Trusts, 2012) (Pew Charitable Trusts, 2013) (Bistrodengi, 2012) (Center for Financial Services Innovation (CFSI), 2013). [2]

The outstanding feature of payday loans are their extremely high interest rates, often called "finance fees," and the fact that they do not amortize[3] (Pew Charitable Trusts, 2013) (Shah, 2019) (Huntsberger, 2017). Before the government introduced regulation reducing the amount of interest that could be charge, annual percentage rates (APR) in Russia were as high as 600% (Shmeleva, 2019).[4] People take payday loans out of desperation to pay for short term needs such as food, clothing and rent. Because the products are marketed as a short term solution lasting no more than two weeks, when borrowers take out the loans, they fully expect to be able to pay them back within the allotted term of the loan and do not expect to have to pay the exorbitant interest rates of 300 to 600% that can accrue on the principal amount of the borrowed funds. Most often, in the end, when they find themselves unable to repay the principal loan, they resort to borrowing from friends and family or using savings to pay back the loans, resources that were available to them initially at much lower or zero interest. As a result, their economic situation is made much worse by the use of a payday loan instead of turning to friends, family or savings in the first instance (Pew Charitable Trusts, 2013) (Shmeleva, 2019).[5]

[1] The proportion of women to men has become more even in Russia and there is some evidence that the preponderance of women taking payday loans is specific to their circumstances of having a greater chance of being a single parent rather than their gender per se (i.e., the rates of payday loans are similar among single parents, however, because women are more likely to be single parents than men, they have higher usage rates of payday loans (Pew Charitable Trusts, 2013).

[2] One major difference between Russia and the US was that in Russia 40% of borrowers reported a delay in receiving their salary as a reason for turning to a payday loan.

[3] The interest and fees that are paid do not reduce the amount of the original principal of the loan.

[4] Comparable to 400% in the USA.

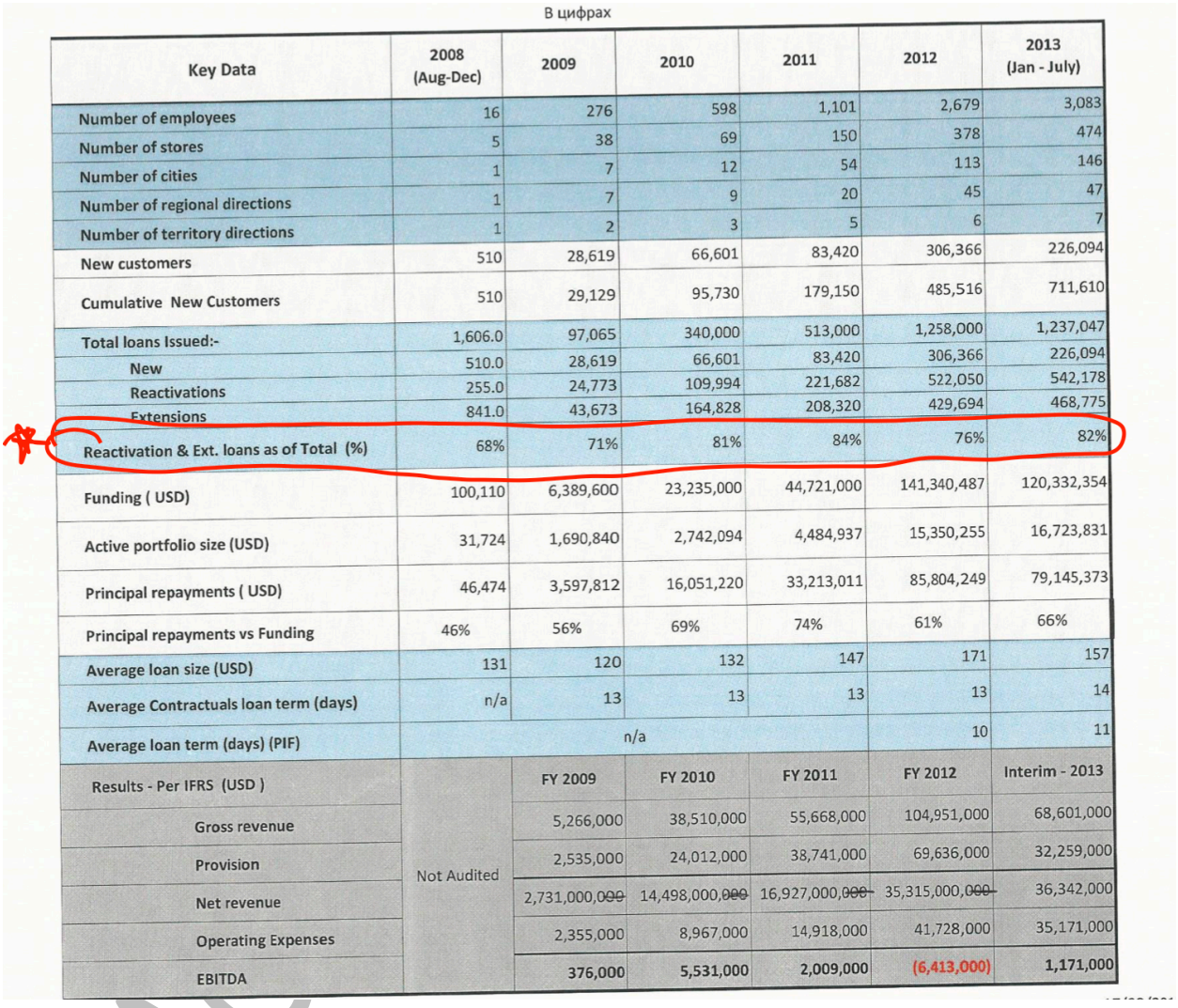
[5] They do not use the funds to invest in any productive assets like a car, a mobile phone or other capital assets that might improve their standard of living or productivity, investments that might carry a long term

Hypothesis

Due to the exorbitant interest rates charged, the way payday loans are marketed and unrealistic expectations on the part of borrowers regarding their ability to pay back the loans, economic outcomes are made worse by the use of payday loans and firms make outsized returns. I will use data from a leading Russian payday loan company Bistrodengi to illustrate my points (See Figure 1).

return that would help defray the cost of the loan, but rather for immediate needs related to everyday sustenance such as paying the rent, paying utilities or paying for food or clothing.

Figure 1: Percentage of Payday Loans that are Reactivated and Extended



В цифрах

Key Data	2008 (Aug-Dec)	2009	2010	2011	2012	2013 (Jan - July)
Number of employees	16	276	598	1,101	2,679	3,083
Number of stores	5	38	69	150	378	474
Number of cities	1	7	12	54	113	146
Number of regional directions	1	7	9	20	45	47
Number of territory directions	1	2	3	5	6	7
New customers	510	28,619	66,601	83,420	306,366	226,094
Cumulative New Customers	510	29,129	95,730	179,150	485,516	711,610
Total loans Issued:-	1,606.0	97,065	340,000	513,000	1,258,000	1,237,047
New	510.0	28,619	66,601	83,420	306,366	226,094
Reactivations	255.0	24,773	109,994	221,682	522,050	542,178
Extensions	841.0	43,673	164,828	208,320	429,694	468,775
Reactivation & Ext. loans as of Total (%)	68%	71%	81%	84%	76%	82%
Funding (USD)	100,110	6,389,600	23,235,000	44,721,000	141,340,487	120,332,354
Active portfolio size (USD)	31,724	1,690,840	2,742,094	4,484,937	15,350,255	16,723,831
Principal repayments (USD)	46,474	3,597,812	16,051,220	33,213,011	85,804,249	79,145,373
Principal repayments vs Funding	46%	56%	69%	74%	61%	66%
Average loan size (USD)	131	120	132	147	171	157
Average Contractuals loan term (days)	n/a	13	13	13	13	14
Average loan term (days) (PIF)	n/a				10	11

Results - Per IFRS (USD)	Not Audited	FY 2009	FY 2010	FY 2011	FY 2012	Interim - 2013
Gross revenue		5,266,000	38,510,000	55,668,000	104,951,000	68,601,000
Provision		2,535,000	24,012,000	38,741,000	69,636,000	32,259,000
Net revenue		2,731,000,000	14,498,000,000	16,927,000,000	35,315,000,000	36,342,000
Operating Expenses		2,355,000	8,967,000	14,918,000	41,728,000	35,171,000
EBITDA		**376,000**	**5,531,000**	**2,009,000**	**(6,413,000)**	**1,171,000**

Source: BistroDengi .

As shown in Figure 1, 82% of payday loans in September 2013 were reactivated or renewed. That is, less than 18% of the loans were paid back within the expected two week time period.[6] Bistrodengi, which was financed with American capital, realized outsized IRRs upwards of 900% and returns on capital of up to 20% (Bistrodengi, 2012).

[6] While the average loan time of 11 days indicates many do pay back the loans even before the two week term of the loan, those that do not stay indebted for an average of 6-7 months or more and result in the majority of the fees and income generated from the loans. The average loan period is also low because many customers take out a new loan to pay off the previous loan. However, this does not reduce their indebtedness or APR as they still spend far more than two weeks in debt (most payday loan customers were in debt for an average of 6-7 months).

Due to the accrual of large amounts of debt that is several times higher than the original principal borrowed, the use of payday loans seems irrational and illogical.

Lessons from Classical Economic Decision Making and The Rational Actor Theory

Classical economic theory posits that decision makers are rational actors that use all available data to make decisions that maximize their "utility," that is, outcomes that are aligned with their own self-interest (Smith, 2010) (Ganti, 2019) (Kahneman, 2012).[7] In this case, we can make a table of the choices a decision maker has when he or she finds out that suddenly she does not have enough money to buy food or pay rent in the middle of a pay period using a classic two option decision model (Bordalo, 2019) and compare the option of taking a payday loan with the most often used substitute which is borrowing from friends and family (See Figure 2 Below):

[7] The concept of utility as used in an economic sense differs from that used by philosophers such as Bentham, Mill and Hume who defined utility as being based on maximizing pleasure (Bentham, 1907) (Mill, 1998) (Hume, 1978). However, as Kahneman points out, "the two concepts of utility will coincide if people want what they will enjoy and enjoy what they choose for themselves" (Kahneman, 2012).

Figure 2: Classic Economic Decision Matrix for Payday Loan

Simple Two Option Decision Choice Matrix for Payday Loan Decision Russia

Take a Payday Loan

	Buy	Not Buy
Performance	Negative - 300% or more interest	0
Risk	High	0

Simple Two Option Decision Choice Matrix for Alternative to Payday Loan

Borrow from Friends or Family

	Buy	Not Buy
Performance	Positive - Little or No cost	0
Risk	Low	0

In the example above, the cost of taking a payday loan clearly exceeds by an order of magnitude (300% or more) the cost of borrowing money from friends or family for a few weeks to make ends meet until one's next payday (nominal cost almost zero).

In Classical Economic Theory, people will buy when their utility is maximized (Bordalo, 2019):

$$\text{Utility} = \text{Return} - A * \text{Risk}$$

A= Risk Aversion

They will buy when Return is > A * Risk

Taking a payday loan violates the precepts of the rational actor theory. The theories of behavioral finance offer an explanation.

Lessons from Behavioral Finance on Why People Take Payday Loans Despite their Very High Costs

In Thinking, Fast and Slow, Daniel Kahneman posits the existence of two types of thinking that dominate human decision making (Kahneman, 2012). System I, Fast Thinking, may be thought of as our primitive, unconscious animal brain, evolved over thousands of years to aid our survival when split second decisions based on incomplete information could mean the difference between life and death. System II, or Slow Thinking, is seen as being more rational and logical, dealing with facts, complex computations and information that lie outside the bounds of intuition and that require concentrated mental effort. Although System 2 prides itself on being the dominant mode, in fact, it is System I that is "effortlessly originating impressions and feelings that are the main sources of the explicit beliefs and deliberate choices of System 2 (Kahneman, 2012, p. 21). Further, these decisions are highly affected by memory and attention (Kahneman, 2012).[8] Biases such as narrow framing, salience, loss aversion, prospect theory, overweighting of unlikely events, emphasis on vivid outcomes, decision making under conditions of anxiety[9] and the effects of memory and attention all come into play.

Taking into account the learnings from behavioral finance, we can create a more accurate and realistic decision matrix concerning the use of payday loans (Figure 3):

[8] We make decisions based on "what information comes to mind (memory) and how we trade off attributes (attention). Thus, "value is comparative" and the context in which we make decisions can distort the decision-making process (Kahneman, 2012) (Bordalo, 2019).

[9] Anxiety can play a role in causing people to make seemingly irrational decisions (Maprone, 2018) (Lee & Wang, 2009).

Figure 3: Behavioral Finance Decision Making Matrix for Use of Payday Loans

Complex Decision Choice Matrix for Payday Loan Decision Russia Taking Into Account Insights from Behavioral Finance

Choices when Funds are Short	Emotional State	Percieved Utility Utility = (Return - A) * Risk Buy (Choose)	Don't Buy (Don't Choose)	Relative Perceived Payoff (Return)	Relative Perceived Payoff	Relative Perceived "Cost" or Pain	Relative Perceived Risk (Expected Probability)	Relative Actual Risk (Actual Probability)	Assigned Risk Aversion (Medium) (A)
Do nothing - let bills go unpaid, food unbought	High Anxiety	-15	0	Homelessness, Hunger	1	5	5	3	4
Borrow from family or friends	Medium Anxiety	-8	0	Shame, Humiliation	2	4	4	2	4
Use Savings (if available)	Medium Anxiety	-2	0	Lost Savings, Lost Interest	3	3	2	1	4
Take a Payday Loan (where headline interest rate is 20%)	Low Anxiety	0	0	Easy to use, immediate relief	4	2	2	4	4
Use overdraft feature on savings account	Low Anxiety	0	0	Not available	0	0	0	0	4
Use Credit Card (where APR of 23% is shown)	Medium Anxiety	0	0	Not available	0	0	0	0	4

If we assign relative weights to perceived Returns, Risk and a medium high aversion to risk, we see that taking a payday loan gives the maximum utility according to the formula

$$\text{Utility} = \text{Return} - A * \text{Risk}$$

(Bordalo, 2019)

without even taking into account the distorting effect of anxiety and the fact that a payday loan immediately reduces anxiety.

Payday loans are marketed as short term two week products to be repaid in two weeks when the next paycheck is received. Customer service is friendly and reassuring and the actual annual APR if the loan is not paid back, the calculation of which is not intuitive, is not transparently explained to the customer.[10] Rather the simple interest or finance fee of 20% is the headline interest rate used (Pew Charitable Trusts, 2013) (Shah, 2019). The customer tends to underweight the risk that he or she will not pay back the loan in time, overweight the probability of going hungry or becoming homeless (i.e., not take into account that friends or relatives will provide shelter, food or funds or that eviction processes can be complicated and take a long time). The framing is narrow in the sense that the loan is marketed as an easy, simple and immediate solution to a complicated and stressful problem whose probability of non-repayment and high real costs are downplayed or not mentioned. The customers' expectation is that he or she will be able to repay the loan, and that in the case the loan is not repaid, the headline interest rate is "only" 20% in any case (which seems reasonable when compared to the stated APR on a credit card of 23% or more) or the uncomfortableness of having to turn to family and friends.

[10] To obtain the APR, the client would have to realize that there are 26 payment periods (52 weeks in a year divided by 2 as payments are made every 2 weeks). If the headline interest rate is 20% per every $100 borrowed, this results in 26 payments of $20 or $520 paid for every $100 borrowed, and APR of 520% not including any penalties or other fees incurred.

What customers pay attention to, remember and therefore overweight is the fear and anxiety of shame, humiliation and desperation of not having funds for basic needs or having a broken cell phone while neglecting the risk that they will not be able to pay back the loan in time (an event which has a more than 80% probability) (Bistrodengi, 2012). Seen in this context, the decision to take out a payday loan is not irrational. Rather, in the words of Kahneman, people's behavior "simply…is not well described by the rational agent model (Kahneman, 2012, p. 411) Their decision is further explained by the effect of vivid outcomes (Kahneman, 2012, p. 326) and strong loss aversion which causes the potential loss of home and sustenance to seem almost certain and very salient. Kahneman's prospect theory tells us that people attach values to gains and losses rather than to wealth so it seems reasonable to pay a fee of 20% per $100 borrowed to avoid the loss of food and shelter (Kahneman, 2012, p. 316). The prospect of losing one's home or one's children going hungry now (present bias) seems to be much less than the 20% interest on a payday loan even though the $500 paid for every $100 borrowed causes a real loss of wealth and economic pain.

Even without using a more complicated model which calculates perceived utility, our Simple Two Option Classic Rational Choice Model now looks like this:

Figure 4: Revised Two Option Decision Matrix for Payday Loan Decision Russia Taking Into Account Salience, Memory, Attention, Framing and Loss Aversion

Simple Two Option Decision Choice Matrix for Payday Loan Decision Russia

Take a Payday Loan with 20% Interest Rate

	Buy	Not Buy
Perceived Performance	Positive	0
Perceived Risk	Low	0

Simple Two Option Decision Choice Matrix for Alternative to Payday Loan

Do Not Take Loan and Lose Home, Go Hungry, Have no Car or Phone

	Buy	Not Buy
Perceived Performance	Negative	0
Perceived Risk	High	0

Because the products are marketed as a short term solution lasting no more than two weeks, when borrowers take out the loans, they fully expect to be able to pay them back within the allotted term of the loan and do not expect to have to pay the exorbitant interest rates of 300% or more that can accrue on the principal amount of the borrowed funds. Therefore, the decision making matrix causes the payday loan to look like an attractive option: it has a high perceived return with low risk versus the vivid and salient, if overweighted, possibility of not being able to pay rent or buy food which has a very negative return coupled with a high perceived risk.

When we use more realistic weightings in our complex model for the relative risks and returns of taking a payday loan versus the most commonly used alternative of borrowing from friends and family or using savings, the "best options" or the ones that provide the maximum utility are as follows: 1) use savings if available, 2) borrow from family or friends, 3) do nothing and simply wait two weeks for the next payday. The payday loan option provides the worst outcome as shown by Figure 5 below:

Figure 5: Complex Behavioral Finance Decision Making Model for Taking a Payday Loan Using Actual Weighted Probabilities for Risk and Return

Complex Decision Choice Matrix for Payday Loan Decision Russia Taking Into Account Insights from Behavioral Finance
Using Actual Relative Weighted Risks for Risk and Return

Choices when Funds are Short	Actual Utility Based on Actual Risk (Return -A) *Risk	Percieved Utility Utility = (Return - A) * Risk Buy (Choose)	Relative Perceived Payoff (Return)	Relative Perceived Payoff Weighting	Relative Perceived "Cost" or Pain	Relative Perceived Risk (Expected Probability)	Relative Actual Risk (Actual Probability)	Assigned Risk Aversion (Medium) (A)	Relative Actual Cost	Relative Actual Cost Weighting	Relative Actual Payoff (Return)
Do nothing - let bills go unpaid, food unbought	-6	-15	Homelessness, Hunger	1	5	5	3	4	Late fees, humger, homelessness	4	2
Borrow from family or friends	-2	-8	Shame, Humiliation	2	4	4	2	4	Loss of Social Capital	4	3
Use Savings (if available)	-1	-2	Lost Savings, Lost Interes	3	3	2	1	4	Lost Interest and Accumulated Savings	1	3
Take a Payday Loan (where headline interest rate is 20%)	-12	0	Easy to use, immediate r	4	2	2	4	4	20 -300% of Principal Loan Amount	5	1
Use overdraft feature on savings account	0	0	Not available	0	0	0	0	4	20-300% of Principal Loan Amount	5	0
Use Credit Card (where APR of 23% is shown)	0	0	Not available	0	0	0	0	4	23% APR	3	0

This has major implications for public policy as discussed below.

Recommendations for Policy and Regulatory Innovations in the Payday Loan Industry in Russia

By responding to an urgent need and relieving stress due to lack of access to other types of emergency funds payday loans do serve an important function in the development of short-term credit and financial facilities, particularly in developing markets and among the poorer segments of the population. However, as the outcome of these loans are to increase population indebtedness, from a public policy perspective, the increasing use of payday loans is not desirable. In the United States, increased government regulation had a positive effect in reducing their use (Pew Charitable Trusts, 2012). Similarly, in Russia, increasing the level of financial literacy of borrowers also results in lower usage of payday loans as consumers begin to become educated as to their true costs (Shmeleva, 2019).

The government should continue to increase the regulation and monitoring of the payday loan industry and limit the total amounts of fees and interests that can be accrued and charged on principal. In addition, the government should invest in public financial literacy campaigns to increase awareness of the true costs of payday loans (the actual APR), the risks that they entail and preferable alternatives. Further, the government should support efforts to create a standardized and universal creditworthiness and credit history system, teaching the population

of the importance and benefits of documenting and smoothing income and expenses by the use of banking products and budgeting tools.

Although traditional banking services may not be available in many regions, with the advent of online banking and new fintech options and the increasing use of the internet via mobile phone apps, there is an opportunity to create new financial products and services that can assist the population in better understanding basic financial concepts and providing them tools to better save and insure against short term delays and losses of income. As payday loans tend to be used more by women and women have been shown to have even less financial literacy and confidence than men (Kiseleva, et al., 2019), the government should consider the creation of an online platform that targets women. The platform would not only promote financial literacy, but also function as a comparison shopping site that lists the different kinds of loans and insurance policies that are available, providing standardized comparisons of costs such as APR. By providing a new target market for banks and insurance companies, such a platform would also encourage the creation of specialized financial services and products that address the specific financial challenges of women such as lost income due to maternity leave or divorce.

Strategic Implications and Competitor Reaction

Stronger regulation combined with better financial education will create a negative reaction from the payday loan industry which may try to lobby for reduced interference or the status quo (Center for Financial Services Innovation (CFSI), 2013). It will reduce the profitability of the payday loan industry, causing unscrupulous firms to potentially divert their attentions to scams such as fake debt consolidation schemes or even black or grey market lending (Shmeleva, 2019). However, over the long run, responsible capital will seek better and more innovative ways to serve those who currently use payday loans, such as helping them to establish reliable credit histories and creating products, such as short term amortizing loans or collateralized loans, that may not be as profitable but are more sustainable for consumers over the long run. The government should remain diligent in these efforts as a decrease in unsustainable public indebtedness and increased financial literacy will have a positive impact on economic outcomes for individuals and households.

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