

Statistical Analysis of the Financial Activity of Households in the Context of Macroeconomic Fluctuations

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Abstract

Background/Objectives: The article presents a descriptive analysis of the household sector response to external macroeconomic effects, which appear to change the nature of the interaction of households with financial institutions through credit facilities, savings, investment and insurance. **Method/Statistical Analysis:** To identify the groups of population that could potentially be involved in money laundering and terrorist financing due to insurmountable financial difficulties, we used methods of comparative analysis and methods of time series analysis. The analysis was performed according to a representative longitudinal survey of the population of the Russian Federation "Russian Monitoring of the Economic Situation and Public Health by NRU-HSE", as well as on the basis of official data of the Central Bank of the Russian Federation for the period since 2005. **Findings:** The conducted analysis revealed changes in the structure of the welfare of Russian households that amid rising rates and loan growth at low financial literacy leads to the formation of population groups, whose trajectory of consumer behavior is completely determined by their credit borrowing and does not take into account the real material possibilities of the family. This group is quite plentiful and constant lack of money, often multiplied by the unreasonable demands, generates people with the potential risk of being involved in money laundering and terrorist financing. The most frequent consumers of loan products are families with children. However, the increase of households that applied for loans occurred among single people as well. It is among single respondents that during the study period the ratio of loans outstanding to the subsistence minimum doubled. In addition, the burden of payments for single people was also the most difficult: the ratio of loan repayments to the subsistence level for a single person is three times higher than for families with children and is twice higher than for families without children. These results complement the existing research, linking the financial behavior of households and their vulnerability to the risk of money laundering. **Applications/Improvements:** The obtained results may be useful in arranging the monitoring of financial safety at the micro level.

Keywords: Expenses, Incomes, Risks of Money Laundering and Terrorist Financing

1. Introduction

The global financial crisis rapidly spreading brought to the fore not only the need to ensure national economic security, but also identified reduction of systemic risk in the financial market as one of the most important factors of financial security. Vulnerability to the risk of money

laundering of the financial market institutions acts as a catalyst in the shock processes in the global financial market and the whole economic system.

The responses of the household sector to external macroeconomic effects (systemic risk, economic and political crises) are manifested in changing the nature of the interaction of households with financial institutions

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through credit facilities, savings, investment and insurance. Further more, this set of house hold characteristics that determine the asymmetric structure of well-being allows revealing their involvement in the financial market, taking into account their vulnerability to the risk of money laundering.

Among the systemic risks in varying degrees having an effect on the increasing vulnerability to the risk of money laundering among the population one can identify the ever-growing disparity between export-oriented production sectors, such as fuel and raw materials industries, and industries whose products are geared to the domestic market. With the high level of tax revenues in most manufacturing industries and agriculture a situation is created when an enterprise becomes unprofitable without tax evasion. It, the refore, gives rise to forced shady behavior of enterprises, companies in which the general public is involved.

The unreliability of a considerable number of banks and financial institutions greatly increases the risks associated with long-term investment and savings deposits in Russian banks. This gives rise to the withdrawal of funds from the manufacturing sector and their transfer (often by shady channels) abroad in the sphere of financial speculation and for non-productive consumption. Economic crime, which has become the norm of economic activity, leads to a drop in investment and reduction in the volume of money in the real sector, fewer jobs and decline of real wages among many categories of workers.

Constantly occurring in media mention of the ultra-high incomes among a narrow range of financial and industrial elite leads to the growth of corruption in the state apparatus, because the decision-makers at various levels, also seek for grabbing a piece of the pie. A sharp change in ideological orientation and codified value system, the impoverishment of significant portion of the population, and a number of other negative changes caused loosening of moral attitudes of many people. Considerable population groups as a result of a sharp change in their economic and social status and living conditions have dropped out of conventional social structures, sustainable way of life and were not able to fully adapt to new conditions. As a result, watching someone else's beautiful life in the media by a certain part of the population often leads to a desire by any means, including illegal, get their own share, and they are candidates for involvement in various forms of money laundering and terrorist financing (ML/TF). Especially these processes

exacerbate in a situation of increase in systemic risks, accompanied by social and economic crises.

The population is in the area of the high vulnerability of the shadow economy activities, receiving illegal salary; falling into the network of financial pyramids and other fraud schemes in the financial market; find the mselves among the victims of systemic crises, leading to an increase in the market value of convertible currencies, and following this increase in prices for consumer goods.

This situation makes the task of identifying relevant population groups that could potentially be the subject of involvement in money laundering and terrorist financing as a result of insurmountable financial difficulties, addiction to unnecessary spending, high indebtedness under credits and loans and others.

Carried out in recent years large-scale procedures of representative surveys of households on a wide range of issues relating to various aspects of their life can shed light on these extremely complex processes. Of course, the questionnaires are drawn up so that people do not experience discomfort when answering questions about their income and expenditure, savings and loans, the activity in the financial markets and others. But, nevertheless, a thorough analysis of such data, identifying certain "inconsistencies" in response, the systematic failure to answer a number of other indirect indicators will allow more likely identifying at-risk groups of money laundering and terrorist financing.

2. Methodology

The widespread introduction of information technologies in scientific activity greatly expanded the scope, range and availability of official and reliable information on all spheres of life of the population. Thus, macroeconomic statistics on the level of living standards, the financial behavior of households is widely represented in a large number of official publications and on the website of Rosstat (<http://www.gks.ru>). These are indicators on the amount, composition, sources and main directions of use of population monetary incomes (according to the balance of income and expenditure), data on individuals' deposits in credit institutions, propensity of the population to save, wages of employees of organizations, as well as debt arrears in wages, social and economic differentiation, the structure of consumer spending, the main indicators of social security, living conditions of the population.

A considerable amount of important information on the financial situation of the population is also found on the website of the Central Bank of the Russian Federation.

However, the macro economic and banking statistics give only a general picture regarding certain aspects of the life of the population, while the relationship between the structure of the household, characteristics of its well-being and financial strategies in the financial markets is of considerable scientific and practical interest. For a more detailed analysis the data collected directly from the households are necessary.

The largest source of data on living standards is the "Russian Monitoring of the Economic Situation and Public Health by NRU-HSE" (RLMS-HSE)¹.

In the framework of this survey the structure of households' available resources can be represented as follows:

Available resources = cost of natural incomes and benefits from the employer + cash resources.

Cash resources = amount of loans and depleted savings + money income.

Money income = revenues from sales of farm household product + labor compensation + social transfers + private transfers + other income.

Key items of income can be represented by the following identities:

Cash expenses and savings = increase in savings + cash expenses.

Cash expenses = consumption expenditure + expenditure not included in the consumer expenditure.

Consumption expenditure = spending on food and soft drinks + spending on alcoholic beverages, tobacco products and drugs + spending on clothes and shoes + spending on housing services, water, electricity, gas and other fuels + spending on household items, household appliances and daily care + spending on health care + spending on transport + communication expenses + spending on organizing recreational and cultural activities + costs of education + expenditure in hotels, cafes and restaurants + spending on other goods and services.

Spending not included in consumption expenditure = the cost of private farm household + real property purchase + taxes, fees and other mandatory charges + support for relatives and friends + other expenses.

In a situation of considerable income inequality the middle (median) income often gives a more correct measure of average income than the simple average index,

so indicators of per capita median income and relative poverty line, calculated as 60% of per capita median income, are used for the analysis.

A wide range of variables that are defined through the following questions asked to members of the household is also used for the analysis:

-Did your family pay for housing, i.e. the apartment, including rent, if you rent housing, and utilities in the last 30 days?

-How many rubles did your family actually pay during the last 30 days for the apartment, including rent and utilities?

- Does your family have unpaid bills for housing, i.e. the rent and utilities?

- What is the amount of debt for the rent and utilities?

- If you recall the last 3 months, how many rubles on average per month was your family supposed to pay for an apartment, including rent and utilities and excluding subsidies and benefits, if you have any?

- Did your family spend the money to pay for children's maintenance and activities in preschool institutions, schools, sections, clubs, to pay for private tutoring, tutors, including gifts to the teachers in the last 30 days?

- How many rubles did your family spend on children's maintenance and activities in preschool institutions, schools, sections, clubs, to pay for private tutoring, tutors, including gifts to the teachers for the last 30 days?

-Did your family spend the money to cancel a credit and to repay the loan in the last 30 days?

-How many rubles did your family spend to cancel a credit and to repay the loan?

-Did any one in your family take out a loan in the last 12 months?

-Did your family take out a loan in the last 30 days?

-How much is the credit in rubles your family took in the last 30 days?

-Does your family have any debt on loans at present?

- How much is your family's debt on loans (in rubles) at present?

- Is the place where your family lives at the moment a hostel, a rented accommodation, or is it an accommodation of your own?

-What is the current market price of an accommodation like yours?

-Does your family occupy a separate apartment, apart of the apartment, a separate house, a part of the house?

-Who is now the owner of your house?

- What is the over all living space of your family accommodation, that is, the sum of the areas of living rooms, the kitchen, the bathroom, the toilet, the hall way, storage rooms and the like in your apartment (house)?

- What living space does your family occupy? How many square meter sofarea are your living rooms?

-How many living rooms does your family have?

The socio-demographic structure of the house hold is characterized by the following classification: a single person up to 30; a single person of 30 or older; a married couple without children (a wife under the age of 40); a married couple without (a wife of 40 and older); other childless families; a married couple with one child; a married couple with two or more children; complex households (a married couple with children and other relatives); a single parent with children; other types of households with children.

In addition, house holds are characterized by a number of children up to 3, from 3 to 7, from 7 to 18. Besides, you can use the number of children under 16, the number of adults in the household aged from 18 or 16, the number of pensioners up to 72 or from 72 or older, or the total number of pensioners in the household regard less of age.

The settlement type was taken into account in the analysis according to the following variables: a regional city, a town, an urban village anda village.

The socio-demographic structure of house holds is presented in Appendix A.

AppendixA

The socio-demographic structure of households (per cents)

Household type	Year								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
A single person up to 30	1.53	1.77	1.86	1.06	1.01	2.04	2.01	2.13	1.82
A single person of 30 and older	17.83	17.76	17.62	18.39	18.57	16.87	17.18	17.09	18.59
A married couple having no children (a wife under the age of 40)	3.43	3.72	3.17	3.31	3.73	3.51	3.66	3.51	3.29
A married couple having no children (a wife of 40 and older)	13.47	13.62	13.57	13.06	14.29	14.58	14.00	15.13	15.88
Other childless families	21.15	22.56	22.71	22.70	22.66	22.81	21.68	21.35	21.14
A married couple with one child	13.80	12.89	13.59	13.20	13.02	11.64	11.74	11.47	11.14
A married couple with two or more children	7.00	6.85	6.03	6.04	7.03	7.62	7.03	7.03	8.32
Complex married couples with children	10.21	10.06	9.07	9.65	9.29	10.77	10.75	10.62	10.77
Single parent non-extended families with children	4.81	4.08	4.09	3.01	4.03	3.89	3.07	4.00	3.56
Other types of families with children	5.86	6.69	6.49	5.08	5.46	6.27	6.16	5.88	5.49
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

3. Results

What is the structure of households' available resources and how was it changing from 2005 to 2013? The nominal values of household income and expenditure, reflecting both the increase in their real value and inflation processes are presented in Table 1 Appendix B. For further analysis all components of income and expenditure were recomputed as a share of household available resources (Table 2 Appendix A). The analysis considered the household income and expenditure received and spent during the last 30 days preceding the survey.

As can be seen from the tables, cash resources, the share of which even rose slightly in the analyzed period, were the bulk of the available resources in their structure. This was due to reducing the cost of natural incomes, the share of which is very small; their maximum proportion did not exceed 2.69% in 2005, while the minimum one was 1.64% in 2012.

In the structure of cash resources notice able fluctuations occurred in loans and depleted savings. In 2005, they accounted for 5.08%, and in 2006 they took a sharp jump to 18.33%, then by 2009 their share dropped to 11.77%, and then again began to grow. As a result, the share of money income has decreased from 91.33% in 2005 to 84.41% in 2013. The share of household income as a result of growth in the share of loans and depleted savings achieved the smallest value in 2006 and 2007.

Table 1. Household income and expenditure

	Year								
	2005	2006	2007	2008	2009	2010	2011	2012	2013
Available resources, including:	14056.4 2	20371.53	23873.9	30451.93	31139.0 2	37240.95	41806.0 7	48198.69	50530.55
Cost of natural incomes and benefits from the employer, including:	377.6988	426.5525	623.393	613.3324	638.5426	921.9513	826.8911	792.127	966.0774
Cost of natural incomes	377.6988	426.5525	623.393	613.3324	615.2976	909.2221	753.3817	743.1342	939.4546
Benefits from the employer	0	0	0	0	23.24501	12.72919	73.5094	48.99279	26.6228
Cash resources, including:	13678.72	19944.98	23250.5	29838.59	30500.48	36319	40979.18	47406.57	49564.47
Amount of loans and depleted savings	840.6715	3734.082	4187.507	4262.822	3664.898	4763.795	5862.551	7259.164	6909.62
Money income, including:	12838.05	16210.9	19063	25575.77	26835.58	31555.21	35116.63	40147.4	42654.85
Revenues from sales of farm household product	435.8766	572.7602	482.7959	940.2856	736.9575	654.9206	744.6185	832.3507	790.2827
Labor compensation	8539.962	10901.94	13511.8	16963.71	18247.94	20434.07	22866.2	25895.82	27676.46
Social transfers, including:	2324.676	2666.128	3106.391	4241.258	5360.068	6992.419	7985.764	8711.727	9552.821
Pensions	1916.528	2243.383	2564.524	3480.971	4216.795	6026.358	6741.149	7615.872	8305.461
Benefits, including:	77.13933	84.0697	146.3088	214.1957	288.3666	369.7344	377.0791	382.4676	415.2103
Reliefs	17.80293	16.45555	19.96129	18.97028	55.5438	56.98246	48.53303	56.33412	39.02921
Benefits for children	59.3364	67.61416	126.3476	195.2254	232.8228	312.7519	328.5461	326.1334	376.181
Educational scholarships	29.4311	30.88106	51.1318	56.5127	65.76796	77.57137	67.72511	80.28863	77.60314
Subsidies and supplemental payments	301.5773	307.7946	344.4271	489.5782	789.1385	518.7552	799.811	633.0986	754.5461
Private transfers, including:	908.9378	1102.124	1152.183	2188.731	1397.008	1861.29	2090.368	2230.43	2989.281
Alimony payments	61.0325	59.28115	90.91355	98.47282	118.4686	154.2319	147.1522	192.4797	181.1533
Voluntary financial aid (private)	805.0886	998.3692	1018.671	2018.195	1203.938	1606.212	1874.395	1955.637	2471.965
Voluntary financial aid (organization)	42.8 1671	44.4 7358	42.5 9871	72 .0 6244	74.6 0214	100.8 464	68.8 2034	82.3 1291	336.1 628
Other income	628.6016	967.9479	809.8299	1241.788	1093.605	1612.508	1429.685	2477.076	1646.006
Cash expenses and savings, including:	14226.16	19917.43	22880.21	29431.08	27758.48	34791.58	39002.14	46463.37	47507
Increase in savings	1021.737	1417.279	1486.756	1792.578	1617.145	2019.36	2371.697	2696.138	2184.506
Cash expenses, including:	13204.42	18500.15	21393.45	27638.5	26141.34	32772.22	36630.44	43767.23	45322.49
Consumption expenditure, including:	11004.89	13807.39	16993.57	20812.13	20271.21	26188.1	28466.95	32935.15	34113
Food and soft drinks, including:	3686.894	4344.326	5071.778	6202.324	6339.353	7556.399	7850.99	8516.622	9001.033
Bakery products and cereals	553.1386	581.4101	699.3793	880.9825	868.8182	977.2295	1007.946	1057.848	1115.288
Meat	1244.213	1420.319	1687.239	2052.446	2132.154	2460.55	2697.413	2977.751	2981.877
Fish and seafood	149.109	191.2573	224.7026	284.4121	300.93	314.2625	359.391	393.3251	488.3002
Dairy products, cheese	430.1198	503.4308	624.8786	762.0312	764.7689	977.876	1062.756	1121.674	1207.118
Eggs	87.74799	95.38052	132.1382	157.1257	142.2682	165.5888	164.5052	175.4751	217.4709
Oils and Fats	178.0733	176.7847	265.2148	308.1154	270.2308	311.476	338.4839	345.9288	338.6112
Fruit	262.0268	333.5056	395.3637	523.1692	485.6847	646.9458	667.9614	723.1988	675.6224
Vegetables	163.9708	203.8853	222.1847	268.9262	252.5561	366.9234	301.9796	343.8095	371.9254

Potatoes	100.8233	187.5381	150.0634	149.0051	179.9831	296.5939	163.8346	186.0419	261.0674
Sugar, jam, honey, chocolate and sweets	306.6933	380.7189	368.0039	481.7289	590.6853	643.2411	674.0824	733.7086	710.9484
Non-alcoholic beverages	193.255	250.8543	280.799	308.7272	322.8615	367.171	382.2954	422.8732	467.7193
Other foods	17.72371	19.2412	21.81124	25.65432	28.41235	28.54135	30.34124	34.9883	165.0848
Alcoholic beverages, tobacco products and drugs	352.196	424.7042	501.9985	573.4075	585.9927	712.0513	801.5181	966.0752	1050.944
Clothes and shoes	1217.329	1435.527	1690.126	2027.933	1754.301	2207.05	2447.678	2643.425	2724.303
Housing services, water, electricity, gas and other fuels	1411.63	1816.375	2144.247	2643.946	2997.905	3828.904	4165.04	4380.01	4912.695
Household items, household appliances and daily care	558.0046	686.6431	775.362	960.9175	792.4145	1012.758	1197.421	1354.308	1459.342
Health care	548.4277	677.43	776.8062	1048.889	1303.376	1685.341	1927.98	2326.329	2748.734
Transport	1495.212	2028.395	2366.541	2676.117	2274.961	3295.413	3470.658	5196.119	4517.773
Communication	390.8027	508.6851	738.5751	862.5943	870.9466	985.8109	1065.416	1146.235	1223.061
Organizing recreational and cultural activities	263.0161	398.5853	1276.501	1818.391	1368.469	1753.763	2161.188	2725.529	2681.906
Education	201.1128	273.0504	304.4582	357.8584	399.7627	844.8107	828.2498	961.8297	952.8296
Hotels, cafes and restaurants	605.5861	752.03	851.1492	1027.428	958.645	1541.245	1735.484	1788.702	1854.862
Other goods and services	274.6766	461.6376	496.0308	612.3203	625.0869	764.556	815.3222	929.9672	985.5179
Spending not included in consumption expenditure, including:	2199.534	4692.767	4399.877	6826.373	5870.124	6584.116	8163.498	10832.08	11209.49
The cost of private farm household	186.1825	251.8991	168.3903	240.8651	258.9299	251.7729	300.3296	296.045	327.8215
Real property purchase	1109.624	2293.424	1794.174	3390.284	2547.364	2542.131	3671.018	4815.911	5057.108
Taxes, fees and other mandatory charges	146.0559	1180.577	1448.56	2115.5	1700.334	2005.539	2320.499	3362.414	3848.498
Support for relatives and friends	757.6717	716.4656	795.2717	842.3716	1103.898	1502.728	1564.023	1941.591	1737.318
Other expenses	0	250.4005	193.4817	237.3517	259.5976	281.945	307.6284	416.1143	238.7434

This trend, of course, is linked to the boom in consumer lending and the prosperity of micro finance institutions in this period of time.

Revenues from the sales of PFH (private farm household) product in the structure of money income in the period under review began to play a much weaker role, as a result, in particular, of the economic growth leading to the increase in social transfers, particularly pensions. In this situation, households, mostly the elderly, for whom the sale of PFH products was previously included in the survival strategies, were able to reduce the effort to earn extra income.

During the analyzed period, a process of reducing the share of savings and cash expenses was under way. Moreover, consumption expenditure fell by more than 10% and the reduction concerned all items of food and

non-alcoholic products. Spending on health care slightly increased (1.54%) and spending on recreation and cultural activities was quite noticeable (3.44%).

Among the items which are not included in the consumers' ones, there was an increase of costs for the purchase of property by 2.2%, as well as payment of taxes, duties and other compulsory payments to 6.6%.

Figure 1 shows that during the analyzed period there was the decline in household expenditure in relation to their available resources. So in 2005, households spent an average of two per cent more than they earned. The dramatic decline in this ratio occurred in 2009, when the household income exceeded expenses by almost 12%. This is most likely due to the crisis of 2008, when the negative expectations of the population led to a deceleration in consumer spending. As for the households' current

Table 2. A share of mean values of components of household income and expenditure in terms of available resources (%)

	2005	2006	2007	2008	2009	2010	2011	2012	2013
Available resources, including:	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Cost of natural incomes and benefits from the employer:	2.69	2.09	2.61	2.01	2.05	2.48	1.98	1.64	1.91
Cash resources, including:	97.31	97.91	97.39	97.99	97.95	97.52	98.02	98.36	98.09
Amount of loans and depleted savings	5.98	18.33	17.54	14.00	11.77	12.79	14.02	15.06	13.67
Money income, including:	91.33	79.58	79.85	83.99	86.18	84.73	84.00	83.30	84.41
Revenues from sales of farm household product	3.10	2.81	2.02	3.09	2.37	1.76	1.78	1.73	1.56
Labor compensation	60.75	53.52	56.60	55.71	58.60	54.87	54.70	53.73	54.77
Social transfers	16.54	13.09	13.01	13.93	17.21	18.78	19.10	18.07	18.91
Private transfers	6.47	5.41	4.83	7.19	4.49	5.00	5.00	4.63	5.92
Other income	4.47	4.75	3.39	4.08	3.51	4.33	3.42	5.14	3.26
Cash expenses and savings, including:	101.21	97.77	95.84	96.65	89.14	93.42	93.29	96.40	94.02
Increase in savings	7.27	6.96	6.23	5.89	5.19	5.42	5.67	5.59	4.32
Cash expenses, including:	93.94	90.81	89.61	90.76	83.95	88.00	87.62	90.81	89.69
Consumption expenditure, including:	78.29	67.78	71.18	68.34	65.10	70.32	68.09	68.33	67.51
Other expenditure	0.00	1.23	0.81	0.78	0.83	0.76	0.74	0.86	0.47

savings, during the entire period their relative decline was observed, which also accelerated in 2012 (Figure 2).

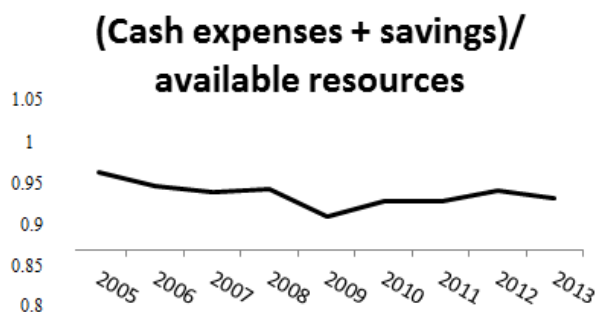
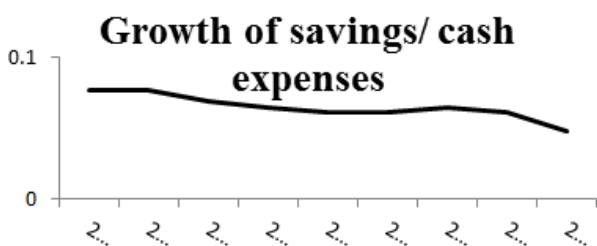
**Figure 1.** Dynamics of the ratio of cash expenses and savings to the household available resources.**Figure 2.** Dynamics of the ratio of increase in savings to the cash expenses of households.

Figure 3 shows the share of households in which the declared value of the expenditure exceeded available resources. From 2007 to 2009 the proportion of

households with the declared income that do not exceed the expenditure decreased significantly, however, the control of significant differences in proportions between the years with the help of t-statistics did not reveal the significance of these differences (95% significance level). Thus, despite some variation about one-third of the population regularly underestimated their available resources during the public opinion polls.

**Figure 3.** Percentage of households in which cash expenses and savings are below the available resources.

From our point of view, the identified situation requires more careful consideration to determine the homogeneity within the group of households by socio-demographic composition, place of residence, etc., as well as the response of financial activity to external shocks.

The growth in household income during the economic boom was accompanied by a consumer boom supported by a massive advertising campaign provided by producers, merchants and financial institutions offering various types of loans and credits for purchases. Since mid-2014 the sharp decline in oil prices and the economic sanctions of the West slowed down these processes.

The growth of rates and loan amounts has been an

Appendix C

Table 1. Households which took out loans in the last 12 months

	2006	2007	2008	2009	2010	2011	2012	2013
Number of households	1304	1166	1056	694	1354	1540	1759	1624
Loan debt amount	44917.67	79255.81	119089.6	100032.4	97171.04	116085.8	184528.1	191959.6
Leverage	0.231	0.231	0.370	0.211	0.244	0.221	0.323	0.300
Loan payments in the last 30 days	3197.21	4050.395	6758.597	4964.885	5607.374	5688.903	8604.659	9464
The ratio of the amount of loan payments in the last 30 days to available resources for a month	0.268	0.175	0.206	0.139	0.171	0.139	0.218	0.187
Cash resources	31080.52	37809.96	47637.97	47161.3	51929.3 3	62044.32	69633.72	77378.96
Cash expenses	29446.92	34362.64	46628.64	39756.01	49366.09	55542.44	70698.52	73914.97
The ratio of loan debt amount to the household subsistence level	4.196	6.334	7.842	6.111	5.447	5.951	9.0 10	8.637
The ratio of the amount of loan payments in the last 30 days to the household subsistence level	0.318	0.329	0.428	0.334	0.315	0.305	0.414	0.452
The objective of the financial credit:								
Residential loan	2.93	4.30	3.80	6.34	3.84	4.61	5.46	5.61
A car	8.79	10.48	12.90	8.65	10.27	13.2 6	14.67	14.43
Education	1 .93	1.98	1.61	2.16	1.26	1.30	0.63	0.55
Consumer	83.27	81.53	78.84	81.41	82.05	80.13	78.23	78.61
Other objectives	3.08	1.72	2.85	1.44	2.58	0.71	1.02	0.80
Demographic type of household:								
A single person	5.60	5.06	6.06	6.34	5.98	6.17	6.88	8.25
Without children	34.51	37.31	35.32	39.48	38.55	37.08	36.21	35.47
With children	59.89	57.63	58.62	54.18	55.47	56.75	56.91	56.28

Table 2. The ratio of the amount of loan payments in the last 30 days to the household subsistence level in terms of the credit objective

	2006	2007	2008	2009	2010	2011	2012	2013
Residential loan	0.541	0.743	1.048	0.755	0.565	0.515	1.147	0.796
Car	0.464	0.576	0.559	0.453	0.583	0.509	0.592	0.660
Education	0.476	0.277	0.212	0.252	0.243	0.222	0.446	0.247
Consumer	0.290	0.277	0.378	0.289	0.270	0.261	0.327	0.392
Other objectives	0.334	0.344	0.520	0.390	0.328	0.357	0.572	0.313

important factor in strengthening of credit institutions; the share of loans to individuals significantly increased in the structure of loans, deposits and other funds provided to organizations, natural persons and credit institutions. Thus, if in 2001 it was only 5.0%, in 2006 it was already 20.8%, in 2010-23.8%, in 2012 -25.2% and in 2013 -29.0%.

Socio-economic phenomenon of consumer lending, steering a mechanism to bridge the gap between the desirable level of people's lives and their current income, influences differently on the life of Russian households.

On the one hand, lending reduces the level of pent-up demand to meet urgent needs and allowing households to obtain access to goods, the accumulation of money for the purchase of which a long time is required. On the other hand, low financial literacy of many people, the desire to have everything and now contributes to the emergence of household groups, whose trajectory of consumer behavior is completely determined by their credit loans and ignores the real material possibilities of the family. This group is numerous enough, and the constant shortage of cash

Table 3. The ratio of the amount of cash resources to the household subsistence level in terms of the credit objective

	2006	2007	2008	2009	2010	2011	2012	2013
Residential loan	13.063	8.197	7.047	4.339	5.478	8.844	8.906	9.335
Car	4.488	4.949	4.208	4.295	3.873	5.136	4.437	3.722
Education	2.797	1.844	1.719	1.822	2.152	2.164	4.127	2.130
Consumer	2.364	2.624	3.216	2.613	2.664	2.581	2.940	3.123
Other objectives	3.782	1.771	2.468	8.796	3.941	2.870	3.896	2.928

Table 4. The ratio of loan debt amount to the household subsistence level in terms of the household type

	2006	2007	2008	2009	2010	2011	2012	2013
Single person	5.935	8.763	8.939	9.668	9.304	8.575	15.122	10.90
Without children	4.202	6.595	7.993	5.131	5.091	5.809	8.172	8.42
With children	4.030	5.952	7.638	6.395	5.279	5.758	8.804	8.44

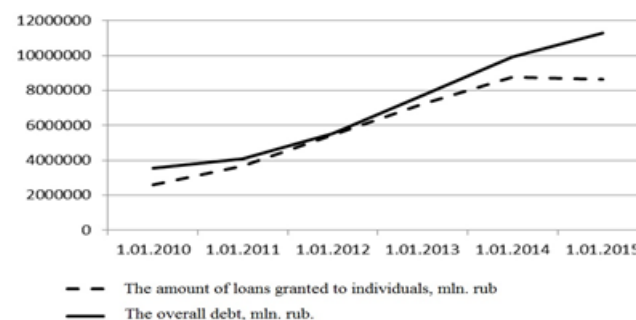
resources multiplied by the often unreasonable demands fosters in it people having the potential risk of being involved in money laundering and terrorist financing.

Debt repayment for a loan reduces the household's available income and the amount of resources which it is able to forward to the remaining needs for a certain period. As a result, the utility of a good or service purchased on credit often becomes largely speculative, and the loan burden can become an unbearable burden. Although credit institutions apply the verification procedure of the borrower's material condition, there is often a fairly common practice, when the borrower submits documents overstating his/her available income. The situation is aggravated by the fact that there is no requirement to provide any proof of income for many types of consumer loans and micro-credits, only a passport is required. These loans are resorted to by households who are not credit worthy in terms of formal requirements and the total value of these loans is highest due to inflated interest rates on them, as well as the significant risks of delay or non-payment.

The problems of households' loan debt are all the more important in light with the increasingly complex economic environment, declining real incomes. According to the Bank of Russia on 01.01.2015, the volume of consumer credit totaled 8.625 trillion rubles and loan debt - 11.295 trillion rubles. Crisis processes that began in 2014, reflected in the decrease in the volume of loans obtained alongside with the continued growth of the debt.

As of November 1, 2015 the overall debt on loans to individuals totaled about 10.7 trillion rubles². That is approximately 73 thousand rubles per each citizen of Russia (calculations are based on data on the population

of Russia)³. According to the calculations by bank analysts at the end of 2013 loans to individuals reached 17% of the aggregate amount of the Russian banking sector assets, and the contribution to the net profit of the banking system at the expense of loans taken out by individuals amounted to more than 30%⁴. This yield creates pressure on financial institutions to increase the supply of loans for citizens not secured by the assets.

**Figure 4.** Dynamics of the amount of loans granted to individuals and the overall loan debt, mln. rub.

However, the macro economic and banking statistics give only a general picture of the loan debt, while the relationship between the debt and the structure of households' loan debt is of great scientific and practical interest; it relates to that unit of society where the decision on credit loans is taken, the possibility of its redemption and reduction of current needs to cover the amount owed is discussed.

The growing interest in the problems of households' loan debt increased after the global financial crisis of 2008, when high levels of debt in relation to the value of households' assets and/or to their available income was

Table 5. The ratio of the amount of cash resources to the household subsistence level in terms of the household type

	2006	2007	2008	2009	2010	2011	2012	2013
Singleperson	4.056	4.837	4.343	5.005	5.476	5.062	7.436	6.73
Without children	3.040	3.810	4.521	3.557	3.268	3.424	3.670	3.66
With children	2.738	2.442	2.697	2.248	2.407	2.859	2.920	3.01

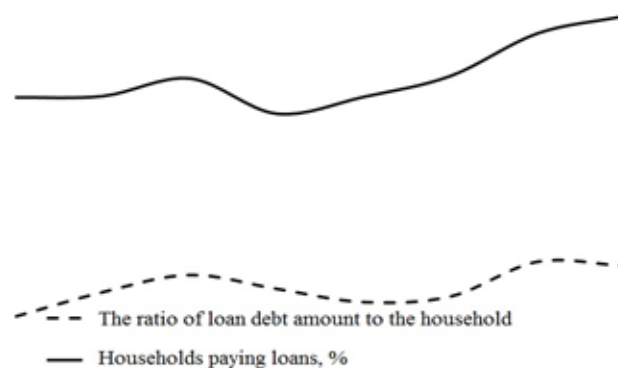
one of the reasons for the US housing market collapse. Recent empirical studies related to the United States revealed that the high level of household debt to assets ratio has a negative impact on consumption expenditure of households⁵. Similar results are presented for a number of European countries⁶. The exposure of elasticity of consumption to credit debts can be carried out in two ways: either as a result of the fact that households will not exceed a certain fixed level of loans to income/assets ratio, or in case the financial institutions put up restrictions on lending to households with high debt.

Problems of the population loan debt have attracted the attention of Russian researchers. So⁷, notes that the level of coverage of the population loans and loan amount in Russia is low compared to other countries. However, due to the fact that consumer loans, which are characterized by high interest rates and short terms, prevail in the structure of granted loans, the share of borrowers with high demand for these loan servicing (50% or more from the current money income) is much higher compared with other countries.

It should be noted that the rapid increase in loan debt burden takes place against a background of low culture of financial products consumption by the population. According to a survey conducted by researchers at the World Bank⁸⁻⁹, it was found that less than half of respondents in Russia are familiar with the basic concepts of financial literacy, such as inflation, compound interest, and others. Similar results were obtained by Russian investigators, for example, O. E. Kusina¹⁰, L. I. Nivorozhikina and others¹¹. Another characteristic feature of the Russian credit market is that most of the loans are used to finance the consumption of goods and services, and the share of mortgage loans remains very low. The sharp increase in the supply of consumer loans at low financial literacy, competition deficit among financial institutions and a lack of regulation of the financial services industry leads to the growth of overdue loans among loan consumers. As of November 1, 2015 the amount of overdue loans amounted to 810163 billion rubles¹².

What happened to the amount of households' loan debt in the period under study? From 2006 to 2013 the

amount of loan debt has grown significantly, as well as the proportion of borrowers (Figure 5). The growing trend presented in Figure 5, briefly changed to a step-down after the 2008 crisis, but the growth rebounded quickly and as a result, the relative debt indicators doubled in 2013 in comparison with 2006. The percentage of households who apply for a loan within 12 months from the date of the survey exceeded 25% by 2008, and then declined slightly in 2009 and 2010, again rising to almost 31% in 2013.

**Figure 5.** The amount of loan debt and the proportion of households paying loans.

Through out the overall period the growth rate of loan debt consistently exceeded the rate of growth of household income. The advance index, calculated as the ratio of the basic growth rate of debt to available resources, ranged from 1.3 to 1.8.

Another analyzed indicator is the amount of loan payments for the 30 days preceding the households' survey (Table 1, Appendix C). The ratio of the amount of these payments to the households' available resources decreased during the reporting period from 26.8% in 2006 to 18.7% in 2013 (the detailed data for each year are shown in Table 1, Appendix B). At the same time the ratio of the amount of payments to the household subsistence level increased from 31.8% to 45.2%, and the ratio of the total loan debt to the subsistence minimum from 4.2 times to 8.6 times. These results indicate a change in the structure of household loans. In the last period of time the share of residential loans began to increase. In 2006 2.0%

of households responded that they paid such a loan; there was a sharp jump in 2009, when 6.3% of households said about it; and then it was pegged at the level of 5.61% in 2013. The interest in buying cars on credit has markedly increased. While the number of such households amounted to 8.8% in 2006, in 2013 it already reached 14.4%. The amount of loan payments of these kinds has significantly increased (Table 5, Appendix C). It should be noted that households paying residential and car loans are relatively wealthy (Table 6, Appendix C). The main type of loans is presented by consumer loans, although it is worth noting that their share was gradually decreasing: 83.3% in 2006 and 78.6% in 2013.

The most frequent consumers of loan products are families with children, but their share gradually decreased from 59.0% in 2006 to 56.3% in 2013. The increase in the households applying for loans occurred among single people, where the proportion of those who make payments towards a loan increased from 5.6% to 8.3%. In the period under study the ratio of the loan debt to the subsistence minimum of households has doubled, and the greatest increase occurred among single people: from 5.0 times to 10.0 times (Table 8, Appendix C). Moreover, the burden of payments was also extremely difficult for them: in 2013 the ratio of loan payments to a household subsistence level within the last 30 days made up 93.8% for single people, as for families without children - 48.3%, and for families having children - 36.0%.

At the same time single people are relatively wealthy. In 2013 the ratio of their cash resources to the subsistence minimum was 6.73, while this ratio relating to families with children - 3.01 (Table 11, Appendix C).

4. Conclusions

The analysis of a wide range of behavioral characteristics of households during 2005-2013's, undertaken in the work, allowed justifying asymmetrical structure of their well-being due to a sharp rise in loan burden, and the use of non-officially declared income for consumption smoothing. This interpretation may undoubtedly indicate a range of latent factors by which households smooth out the current welfare. The data analysis allowed specifying households' responses to the crisis of 2008, which resulted in the decline in income, reduction in loan and saving activity, increase in the severity of households' loan burden. The rapid economic recovery that followed the

crisis of 2008, returned the main indicators of household financial activity to the previous level, the growth in loans continued. However, the crisis processes, which began in 2014, pointed out that the negative trends identified in 2008-2009 could increase the households' vulnerability to macro economic shocks, projected on financial institutions, and the identification of problematic areas of interaction between the government, financial institutions and the public requires information on financial activity of households in 2014-2015 which can be the basis for further research.

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