Kouzina O.

Roshchina Y.

MODELLING THE SAVING BEHAVIOR OF HOUSEHOLDS IN RUSSIA

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1. Introduction. The purpose of the study.

The saving behavior of households presents a subject matter of our study. It is defined as 1) postponing of current consumption, 2) accumulation of liquid assets in the different forms. The household is the basic unit of the research.

Economic situation in 1997 – and the first half of 1998 raised hopes that financial stabilization, slowing down of the permanent fall in production and inflation, and weak downward tendency of incomes' differentiation would produce the basis for the advance of the institutional forms of household financial assets. We hoped it would be possible to stimulate the conversion of household savings into investments. To a considerable extent, this concern about personal saving at that period was caused by the need to estimate the investment potential of households and to encourage savings in institutional forms. While planing the investigation we were going to analyse household portfolio decisions and the impact of different parameters of households on the compositions of their assets.

Economic environment had changed after financial and cabinet crisis in August, 1998. In that situation we had to adapt the main task of our research. Sharp drop in exchange rate, jump in consumer prices, depreciation of ruble assets and losses of deposits in commercial banks resulted in a break of public trust in all financial institutions, mass withdrawal of commercial bank deposits and their subsequent cash dollarization. The expert estimations and the data from the post-crisis surveys at the turn of 1998 testified to the removing of financial holdings in a number of forms. The crisis,

on the one hand, has caused the reduction of the institutionalized forms of assets by way of removal of money from the deposits and keeping them in cash (dollars and rubles), as well as purchasing of consumer goods and stores of food. And on the other – it has resulted in losses and depreciating of ruble assets of households along with the rise of ruble equivalent of cash dollar's assets. The sharp reduction in personal real incomes has led to a steady growth of the consumption rate. In that situation people began to use their financial assets for current needs or to transfer them into reserves of food and staple commodities. Thus, a reduction of a number of households with any financial assets and unification of their forms had happened. It had become obvious that there should be a displacement of accents in the survey that was supposed to be carried out in March 1999. The analysis of the modification of saving behavior after crisis was considered as its main purpose.

There were a number of hypotheses about the modification of household saving behavior: lowering of household real incomes results in decreasing of saving rate, ruble depreciation, crisis and stagnation on stock market, uneven distribution of cash dollars assets among households before the crisis contribute to both concentration of financial assets in a narrow group of households and unification of their forms. On the other hand, the same factors have an inverse influence as well – minor income shocks and uncertainty about future incomes result in economizing strategies, lowering of consumption patterns in the society as a hole and in the reference group (in terms of the relative income theory) might encourage savings at least of those who managed to maintain their income. There is also an ambiguous effect of crisis on the portfolio behavior: stimulus for searching for profitable saving holdings and diversification of households' portfolios which might decrease the risk of losses may be counteracted by shifting towards low-risk assets.

2. Previous studies of household saving behavior

Economic theory of household saving behavior has not been developed on the eve of reforms in the early 90th. On one hand, savings were analysed from the point of view of organising and functioning of saving institutions. On the other hand, the macroeconomic approach to estimating the amount of compulsory savings predominated. It is worth mentioning that savings became voluntary only in the late 50th when the mandatory state loans were abolished. However savings remained partly compulsory even later as a result of consumer goods' deficits. Households financial assets were dramatically depreciated during the period of hyperinflation after the price liberalization in the early 90th. Coupled with sharp drop in the real personal incomes it reduced the possibilities of households to save, but for the first time agents became really free in their decisions about incomes' allocation. Simultaneously the problem of mobilization and subsequent investment usage of household assets emerged.

In the early 90th the stress was laid on the investigations of households saving behavior at micro level. A number of surveys were conducted in order to estimate the total assets of households and to model their saving behavior.

One of the first investigations of saving behavior employing all-Russian survey data (VCIOM) was conducted in the Institute of Economics, Russian Academy of Science, in 1995. There were two main tasks: to elaborate the procedure of estimation of the financial potential of households and to work out the policy of converting savings into investments.

The financial potential was defined as an increase of spare money resources. It was calculated as money incomes' surplus (total amount of money incomes minus total amount of money expenditures). The estimations of saving rate on the VCIOM data basis verified the official Goskomstat data, that in November 1994 households saved 25-26% of their current incomes. Unusually high level of saving rate for the economy

experiencing economic recession and high inflation was explained by intense precautionary motives.

Researchers investigate saving abilities of households in different income groups and came to the conclusion that ability to save increased with the rise of per capita household income. Households with low level of income had very small amount of spare financial resources, savings in the families with average incomes were made in order to postpone their consumption at short date, and only the wealthiest families were able to invest. But their ability had not been realizing because of the absence of the relevant financial tools. According to VCIOM data, families with average incomes preferred to accumulate cash rubles and to deposit in Sberbank, while the wealthiest households kept accounts with commercial banks. Cash dollars, in spite of their relative depreciation, were popular in all income groups of households, while bonds, shares and other securities were regarded to be unattractive among all households as well.

Due to the results of this research, investment potential of households did not differ considerably all along Russia. Though Moscow, St. Petersburg and a number of big cities stood out against a background of the rest of Russia for the number of financial institutions dealing with popular finances, substantial part of financial potential had been accumulating among inhabitants of small towns and villages where even ordinary Sberbank was not always accessible.

On the whole, being one of the first economic researches of saving behavior of households in reforming Russia this paper revealed all the difficulties in this field: ambiguity in the definition of savings both for the researchers and for the ordinary people; the puzzle of the unusually high saving rate in the presence of declining living standards; essential share of savings in cash (dollars and rubles) which amount was difficult to estimate; objective and subjective obstacles in applying economic theories; the

shortage of empirical data.

At the same time the Institute of the problems of employment Russian Academy of Science and the Ministry of Labor of Russian Federation conducted the sociological 'Research of the structure of the potential investors in industrial firms and revealing the encouraging factors in their investment activity' (1994 - 1995). At the end of 1994 and in spring of 1995 two surveys were carried out. Employees at the industrial firms in five regions of Russia were questioned within the framework of the research. The structural analysis of the forms in which people preferred to keep their financial assets and their motivation were the main tasks of this research. All available forms of holdings were divided into two groups: investments and non-investments. The later consisted of deposits in commercial banks, cash dollars and lending money to natural persons at interest. More than 60 % of employees at the industrial enterprises were concerned about their savings. Two thirds of them preferred to keep money in Sberbank, one third - to convert into cash dollars. The main conclusions: investment components of financial assets of employees of industrial firms declined by 15% during the winter of 1994-1995, the reduction was more likely for blue-collar workers than for white collar workers. The main motives, which had influence on the portfolio composition, were profitability of deposits and confidence in the institutions or persons taking money from households. During the winter 1994-1995 the importance of confidence raised considerably. The attractiveness of Sberbank and confidence in commercial banks raised in respondents' opinions, which was more likely for white-collar workers. Concern about shares of industrial firms, municipal or regional bonds, investments into financial companies came to nothing in contrast to cash dollars and informal crediting. The impact of professional and demographic structures at the enterprises on saving (investment) behavior was found. The most well-educated blue-collar and white-collar workers were likely to accumulate

cash dollars, to lend money and to invest into shares of profitable enterprises. Uneducated workers and clerks were interested in the shares of enterprises where they worked. Deposits in commercial banks seemed to be attractive for the polar groups of employees: black-coated workers and unskilled workers. As a whole this research showed the possibilities of structural descriptive analysis of individual saving behavior.

The Institute of social and economic problems of the population RAS conducted the most large-scale research in the field of household saving behavior in October 1996 which was financed by the Central Bank of Russian Federation. Two types of data were used to study household saving behavior: all Russian cross-sectional standardized survey (almost 8000 respondents) data and 70 interviews with the representatives of the wealthiest group of families in four regions of Russia. Researchers turned their attention to the puzzle how to explain that in the presence of low incomes, growth of wage, pension and other social security benefits arrears households managed to save one fifth of their money incomes (as macro statistics reported). The question of primary concern was to estimate the total amount of household savings and financial assets and to shed light upon the main portfolio strategies. The authors came to the conclusion about great polarization of material well-being of households and concentration of two thirds of financial assets in 5% of families, that could explain the paradox of combination of low average incomes with high average saving rate.

Financial assets consisted of deposits in banks, securities and cash, rubles and dollars. Cash dollars accumulated by small entrepreneurs of 'shuttle trade' for purchases abroad were excluded. The empirical findings indicated that 21% of all households had money excess over current expenses and 59% of all households had financial assets. The typology of savers was constructed using motives and aims of saving. A number of recommendations were elaborated to convert savings into investments.

In 1997-98 Russian Center of Privatization and the Institute of Europe RAS realized the project 'Analysis and working out of the guidelines of stimulating of household savings and encouraging of their converting into investments in the context of government policy aimed at economic growth'. This research was based on the data of the fifth (December 1994), sixth (October 1995) and seventh (October 1996) waves of the Russian Longitude Monitoring Survey (Panel data) to discover the structure of financial activity of households and to analyze its stability over two years. Because in the database RLMS there were no information about saving deposits of households, amount and structure of their financial assets, saving motives, research had to be restricted within the analysis of saving behavior during the previous 30 days. The notions of positive (saving) and negative (dissaving) financial behavior were imposed.

Researchers came to the conclusion that during the period of two years the positive financial behavior had been reduced and the activity within negative type had been increased. When the households were segregated into groups of active and passive agents, and among the active part savers, dissavers and combinators were distinguished, the households which stuck to the same type of financial behavior during all the period of investigation were not numerous. And the majority of them were in the group of financially passive households. As a whole financial activity had been reducing. The researches also estimated correlation between the trends of per capita income in households and changes in financial behavior, which turned out to be significant.

3. Financial crisis in August 1998 and its influencing on the economy.

One year between two our surveys (February-March 1998, March 1999) because of the August crisis 1998 has proved to be turning in many respects, and first of all in the field of household incomes, consumption and savings.

According to the official statistic macro data real household incomes in the first

quarter of 1999 were came to 73 % of their level a year before, and real wage - only to 58.5 %. During the first quarter the average nominal monthly wage exceeded the level of living standard only by 47.7% (one year before - more than two times), that argued in favor of the extension of poverty.

The structure of allocation of money incomes had been considerably modified. According to the data of the official statistics household expenses steadily exceeded 80 % of the total money incomes of households. The decreasing of the purchasing power of personal incomes resulted in forced rise of the expenses for food at the expense of nonfoods and services. These tendencies characterized the behavior of the majority of households, and it became especially evident in the low-income groups.

The lowering of the purchasing power of household money incomes resulted in the reduction of the retail trade turnover (by 15.8% in one year). According to the official data the consumer expenses were reduced by 20 %. However if we take into account the shift towards cheaper domestic products and the fact that prices for services have been growing much slowly comparing with consumer lines, real consumption probably had not changed that much. According to the estimations of experts of the Bureau of Economical Analysis, the real consumption structure in spring of 1999 did not generally differ from that one had been formed in 1995: there was a shift from expensive imports to cheaper domestic products and services which had relatively fallen in price.

Some improving of economic activities during the first quarter of 1999 did not result in evident changes on the labour market where situation remained tight. At the end of March 1999 the total number of the unemployed (using the methodology of ILO) amounted to 10 million people, 13,6 % from the active population, against 8.3 million people (or 11,4 %) at the end of March 1998. It is 18,7 % increase for one year.

Thus there were several factors of the maintaining consumption at the similar to

pre-crisis level.

First, permanent settlements of the wage, pension, and other arrears compensated the decline of real wages and incomes of the population.

Secondly, there was a considerable decrease in saving rates. If during a half of a year before the crisis average saving rate according to official data was equal to 18,5%, eight months after August 1998, including August - only 8%. For many families it meant dissaving. The alternate estimation of the share of savings in household incomes (subject to the net increase of cash dollars on hand) in the post-crisis period was close to zero.

Thirdly, the decreasing of purchasing power of household assets in rubles was partly compensated by the rising of the ruble valuation of household assets in dollars. However, only those households which kept their financial assets in cash dollars on the eve of crisis were able to use this advantage. As a result, resources were redistributed in favor of pre-crisis cash dollars' holders.

Finally, the informal employment in the market and within the household sectors created a stream of unregistered money and in-kind incomes.

Let's consider the macroeconomic tendencies during the period of one year March 1998 - March 1999 and the influence of the crisis on economic activity.

The latter half of 1997 was characterized by high consumer activity of the population before announced denomination on January 1, 1998. Households were engaged in the process of active buying of durables, real estate objets, cash dollars trying to minimize cash rubles, increases of deposits in banks and securities. The favorable conditions for the rise in institutional forms of savings had been developed after denomination which had happened to be lossless for all households, in despite of started slowly reduction in real household incomes. The confidence of the population in the institution and tools of financial market had increased. The bankers' ruble deposit rate

during the first half of the year 1998 steadily exceeded dynamics of both the exchange rate and the consumer price index. In the middle of 1998 the retail trade turnover and purchasing of cash dollars had declined, and increase of depositing in banks and securities as well as the rise of ruble cash had happened.

However in the middle of 1998 these positive tendencies began to exhaust, on one hand, because of declining trends of the household real incomes and increasing of wage, pension and other arrears. On the other hand, in the first half of 1998 the current account balance and balance of trade were negative and equaled, respectively, -6,0 and -0,3 bln. dollars. It was the result of unfavorable for Russia world market opportunities and the increase in payments of interest charges to foreign debtors. Liquid currency reserves were also reduced. Expectations of the imminent devaluation of ruble were formed during the summer of 1998 in financial markets.

The crisis in August, 1998 has changed the situation rather sharply. On the 1st of September, 1998 an official rate of US dollar to Russian ruble was equal to 9,3 rub./dollars, having increased since August, 15 (6,2900 руб./dollars) almost 1,5 times. At the middle of March 1999 the exchange rate had grown since August 1998 3,5 times.

The index of consumer prices since August 1998 till March 1999 came to 179,2 %. In the first quarter of 1999 the speed of inflation was slackened. So, the index of consumer prices in January, 1999 came to 108,4 %, in February - 104,1 %, in March - 102,8 %. The annual growth of consumer prices in 1999 appeared to be much less than it was forecasted in the beginning of the year. In conjunction with stability of exchange rate it had reduced in some valuation of ruble.

The withdrawing money from bank accounts which started in June, 1998 after August 17 had become stronger. According to the data of Central Bank in December 1998 the accumulated sum of deposits had decreased by 13 %, the majority of losses fell

on commercial banks (40 % decrease). In Sberbank the reduction of deposits was significantly smaller. In the early 1999 the lowering of households deposits in banks had been stopped. The total bank balances grew to increase, but only in Sberbank, the withdrawing money from bank accounts in commercial banks continued. At the end of May, 1999 the total sum of money on individual deposits in these banks was no more than 65 % from the pre-crisis level. In March, 1999 for the first time from the beginning of the year there was an increase in net cash dollars balance: households bought more cash dollars than sold. In comparison with previous month's data it was increased in 2,7 times.

The crisis had an effect on the whole banking system.

Table 1.The characteristics of the banking system

	On the 1st of August, 1998	On the 1st of April, 1999
The number of acting banks	1573	1433
The number of bank's affiliates	4807	4275
including affiliates of Sberbank	1901	1801
Total assets, bln.rub.	753,8	1248,9

The bank crisis had reduced in the downswing of banking capital. According to some estimations, the amount of banks' net worth during August – October 1998 was reduced more than three times: from 67 bln. rub. down to 20 bln. rub.

The greatest damage was caused by crisis to the largest Moscow banks because of substantial activity on "frozen" GKO-OFZ market, foreign exchange market and great share of individual deposits in the composition of their debt capital. Regional banks

experienced similar, but 'benign' problems. Financial crisis had reduced in lowering of banking capital and rise of the liquidity deficit.

The crisis resulted in the increase of the number of financially unstable banks. The share of them in the total number of banks had increased from 36 % (1.08.98) up to 42,5% (1.09.98); in the total amount of assets – from   12 % (1.08.98) up to 43,7 % (1.09.98).

In the early 1999 Russian financial markets stabilized, the lowering of the interest rates of all financial trading had happened. Profitability of governmental securities declined from 60- 85 % in July - August 1998 till 16-20 of % in July - August 1999, the rates of ruble interbank crediting had also declined: from 45-60 of % down to 20 - 12 %.

It is necessary to mark the positive consequences of the crisis in the banking sphere. The lowering of the share of individual deposits, which will not be possible to change even if the confidence in banking system would be restored, stimulated the banking system to credit enterprises, because the assets of enterprises were used by banks as a security for loans. And the ruble deposits of enterprises began to be restored rather fast.

That fact that the banking system seemed to be more productive oriented was one of the consequences of depreciating of the state bonds and revaluation of the currency credits. The amount of crediting of the economy (basically because of the increase of the ruble estimation of its currency part, and not because of real activity in this field) was increased during 1998 from 9.4% up to 11% of GDP. However productive orientation of banking credit policy increases the credit risk. Taking into account the actual state of the real sector profitable allocation of financial resources of banks within this sector is still limited.

The crisis transformed the composition of banking elite and reallocated the

spheres of influence inside it. The differentiation of the owned capitals and profits of large banks had been increased, as well as the role of Sberbank and influence of regional authorities.

At present the Russian banking system has no other source of its developing but the real sector of the economy, which financial position seemed to improve. The modification of economic environment after August crisis was happening in the presence of the increase of the demand for domestics in the home market. Reducing of the inventory materials funds and stocks of finished industrial products accompanied this process. Displacing barter with money payments interplant was the evidence of the improving of the financial state of the industrial firms.

According to the official statistics, in 1999 the industrial production leaded all the economy. In fuel and energy branches the situation had been improved as a result of the rise in oil world prices. The support to the industry (in tractor and agricultural engineering) was rendered by the state. The shift of the demand of the population to the domestics also had positive influence on dynamics of consumer goods industries.

After the crisis there were positive changes in the balance of payments: if in the first half of 1998 the current transactions in the balance of payments of Russia were negative — minus 5,6 bln. doll., one year later it became positive - almost 13 bln.doll. The foreign trade turnover in the first half of 1999 was 52 bln.doll. (the reduction by 28 %). The cost of export had declined by 13 %, import - by 44 %.

Thus, if to characterize the main consequences of the crisis for the economy as a whole at the end of 1998 - first quarter 1999, it is necessary to mark that in spite of the fact that the devaluation had happened in the very morbid and trying form, it had rather positive influence. The improving of the balance of payments, stabilization of ruble, improving in banking sphere and the recovery of industry in the aggregate created the

necessary prerequisites for economic growth, increasing of households' incomes and savings.

4. The model specification.

In economic theory, the analysis of saving behavior, and especially its dynamic, is based on the saving function modeling. We consider the pattern of savings in contemporary Russia seems to be consistent with Friedman's Permanent income hypothesis with the assumption that there is uncertainty about future incomes. The PIH model assumes that consumption (saving) of households is determined by its permanent income. Friedman assumes that the utility function of household is symmetrical and homogeneous in all time periods. Permanent income is the discounted expected flow of income from human and non-human wealth. In that case the households in long-term period consume the permanent part of their permanent income, keeping their wealth invariable. In short-run perspective people smooth out fluctuations in income by saving in the periods of unusually high incomes and dissaving when they are low. The life-cycle hypothesis in our opinion is less applicable, because in the presence of very low level of current money incomes households are not able to accumulate resources for the retirement, all the more in the absence of working financial institutions of that kind.

Well-known Friedman's hypothesis assumes that people base consumption on what they consider as 'normal' income, which they expect to earn over considerable period of time. This 'normal' income will normally differ from their current, measured income. The difference between these two incomes is transitory income. So in the simplest model of PIH we have

$$C = k\, Y_p, \qquad k = F\,(i,\, w,\, x),$$

where C – consumption, Y_p – household permanent income in the period t, i –

discount rate, w – proportion of nonhuman wealth to other types of wealth, x – other parameters (age, tastes and the like). Friedman made time-series test of his hypothesis based on the annual data for the period 1905-1951, excluding war years. He constructed the variable of permanent income by a weighted average of past values of disposable income, assuming that the weights assigned to the disposable income are smaller for more distant incomes than recent incomes.

Unfortunately, we do not have the time-series panel data about incomes and consumption of households, so we are not able to construct the similar independent variable, or to include incomes or consumption in the previous periods to obtain unbiased regression estimations. We do not have data about gross value of liquid wealth of households (summer house, car), so we will use dummy variables for estimation of households' wealth.

Estimating equation looks like:

$$C_i = a_0 + a_1 Y_i + a_2 A_i + \Sigma a_j W_{ij} + \Sigma a_k X_{ik} + \varepsilon_i$$

where for i household: C_i - consumption, a Y_i – annual income, A_i – sum of assets (deposits and cash) in the beginning of the period, W_{ij} – other liquid wealth variables, X_{ik} – a set of individual and household characteristics (age, a number of children and the like), ε_i - random error.

For the analysis of the portfolio behavior we use the model with binary dependent variable (logit). We test the effect of some household's characteristics (income, wealth, family structure) on the presence/absence of any financial assets. Then we use the same set of variable to test their effect on the each form of assets. The general model takes the form:

$$Aij = \Sigma_k a_{ki}HH_{kj} + \Sigma_m b_{mi}FAM_{mj} + \Sigma_l c_{li}INCOME_j + \Sigma_n d_{ni}WEALTH_{nj} + \Sigma_p f_{pi}EXPEN_{pj} + e_{ij}$$

Where A_{ij} is a binary variable equal to 1 if the household j have the asset i and otherwise equal to zero; HH_{kj} is the set of k personal characteristics of household's head as gender, education, marital status, etc., FAM_{mj} is the set of m characteristics of the household as number of member, children, etc., $INCOME_j$ is the household's income per capita, $WEALTH_{nj}$ is the set of n characteristics of the household's wealth, as owned apartment, car, etc., $EXPEN_{pj}$ is the set of p characteristics of the household's consumption, expenditure and finance, as borrowing, buying, etc., e_{ij} is a random error.

5. The data sources of the research: 1998, 1999 samples.

Economic family, that is people living together and sharing joint budget of incomes and expenditures, is the object of our research. The research is focused on the latter half of the 90s. The using of the data from the other surveys (VCIOM, RLMS) for the studying of portfolio and saving behavior is limited because of the lack of information (unavailability of a number of variables and the insufficient questioning period). That is why our research is founded on the data set of two our own surveys carried out in four Russian towns which are representing different types of regions in the European part of Russia. The 1998 survey was financed by Ford foundation within the framework of the research of survival strategies of Russian households in February - March 1998 in Moscow, Nizhni Novgorod and Ivanovo. The same three cities (plus Syktyvkar, Republic of Komi) were surveyed in March 1999. This survey was designed within the framework of present research. 250 families were surveyed in each city. The sampling and

interviewing was conducted by the Center of sociological researches at Moscow State University. The routing sample was designed as a random selection of 10-20 routes (points, streets) uniformly located on a spiral from the center of a city. A house was randomly selected in each point (taking into account the number of storeys in it), and in a house each n-numbered apartment was picked up.

We want to emphasise that we do not have a panel, there are two different samples.

Urban population has been picked out for our research because of its main saving potential, as well as because of the tight project budget and survey's limits. There was no aim to realize all-Russian representative sampling, but to present different types of regions of the European part of Russia and to have comparability with our previous data (the survey in 1998), that is to have basis for estimating of the process in dynamic.

There is no doubt that Moscow represents unique for Russia region, with the highest per capita income and income differentiation, the most advanced financial infrastructure and the greatest saving activity of the population. Nizhniy Novgorod represents not metropolitan financial center with close to average level of social and economic parameters. The republic of Komi is a resource-rich region with rather stable social and economic position, significant share of raw branches and high per capita income, and Ivanovo is an example of depressed regions with the lowest income and great share of poor households.

Survey data 1998. In February-March 1998 the survey was carried out in three cities: Moscow, Ivanovo and Nizhni Novgorod. About 750 families (approximately on 250 in each city) were questioned on random route sampling in total. The data about more than 2000 persons were obtained taking into account all members of households. Though a variety of different types of families was represented, our sample was slightly

biased comparing with Goskomstat data. The proportion of able-boded and highly educated persons was higher in all cities. In Moscow we had the lower share of the households with children and extended families, and in Nizshni Novgorod – the higher one. Because the type of the family correlated with the level of incomes and expenditures, we considered incomes in Moscow and Ivanovo to be overestimated and in Nizshni Novgorod – to be underestimated. It can also affect on the comparison with 1998.

The questionnaire in 1998 is smaller than in the survey 1999, so not all the comparisons are possible.

Survey data 1999. The survey was carried out in March 1999 and it was conducted in four cities: Moscow, Ivanovo, Nizhni Novgorod and Syktyvkar. More than 1060 families (approximately on 250 in each city) were questioned on random route sampling in total. The data about more than 2846 persons were obtained taking into account all members of households. We can say that the main demographic characteristics of the sample were closer to those of general population than in the survey in 1998. The structure of families practically did not deviate from the real one taking into account the number of people in the family, but the proportion of families with 3 children were overstated in Moscow, and understated in Ivanovo and Nizhni Novgorod. It can caused the underestimation of income in Moscow, and also affect on the comparison with 1998, when we had the reverse bias. As well as in 1998 the proportion of able-bodied and higher-educated citizens was overstated.

The average values of all main socio-demographic variables of the surveys 1998, 1999 are represented in Appendix 1,2.

6. The empirical results: incomes, consumption, savings, wealth, assets of households.

Incomes and expenditures of households. According to our data, the monthly average per capita income for in January 1999 - March 1999 in Moscow was 1362 rub. (in the year 1998 in terms of 1999 with regional deflator - 2535 rub.), in Ivanovo - 581 (1300 rub. in the year 1998), in Nizhni Novgorod - 690 (1250 rub. in the year 1998), in Syktyvkare - 950 rub[1]. If to compare these outcomes to those in the year 1998 we can say that real incomes in all three regions have been reduced approximately more than 2 times, and there was a fall even in nominal terms in Ivanovo.

According to data of State Committee of Statistics per capita nominal money incomes in March 1999 were equal to 4965,1 rub. in Moscow, 721,7 rub. - in Ivanovo region, 862,4 rub. - in Nizhniy Novgorod region, 1707,3 rub.- in republic of Komi, cost of living: 1166 rub. – in Moscow, 746 rub. – in Ivanovo, 707 rub. in Nizhni Novgorod, 868 rub. – in Komi. It is obvious that our data differ from the official statistics, though in Ivanovo and Nizhni Novgorod this lack of correspondence does not exceed the usual discrepancy between the data of surveys and official statistics (about 20 %). The differences for Syktyvkar and Moscow are bigger, that can be explained by usual for such surveys lack of very wealthy households (the wealth differentiation in these regions is higher), refusals to give answers about income and underestimating of income by respondents. In Moscow it might be a result of overstating of households with 3 children and low income, and the higher proportion of those who had refused to give any information about their income.

A typology of material well being of families had been applied in analyzing of the variation in their saving behaviour. We divided the sample into 4 conditional groups using the criterion of income – to – cost of living ratio in every region. In 1998, the level of incomes equal to one regional minimum of subsistence (RMS) was used to define a

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[1] 1 dollar in March 1999 was equal to 24,18 rubles.

poverty line, the level of incomes of needy families for was defined from 1 up to 2 RMS, independent families with medium incomes - from 2 up to 4 RMS, rich households - more than 4 RMS. In 1999, we have to adjust the poverty line 2 times downwards because of a profound change in income and minimum of subsistence parity in Russia (see The table 2).

Table 2. Proportion of the families with a ratio of the per capita income to the regional minimum of subsistence in 1998 and 1999 samplings

		Moscow	Ivanovo	N.Novgorod	Syktyvkar	Total
Survey data	March 1998					
	Less than 1 RMS	24,6%	17,9%	29,3%		24,2%
	1-2 RMS	44,5%	47,9%	46,2%		46,2%
	2-4 RMS	21,2%	26,1%	18,4%		21,7%
	More than 4 RMS	9,7%	8,1%	6,0%		7,9%
	Total	100,0%	100,0%	100,0%		100,0%
GKS data	RMS, rub.	552	296	312		
	Per capita income, rub.	2878	522	617		
	Per capita income/ RMS	5,21	1,76	1,97		
Survey data	March 1999					
	Less than 1 RMS	71,5%	82,9%	76,7%	62,9%	73,8%
	1-2 RMS	16,7%	13,5%	18,9%	25,3%	18,5%
	2-4 RMS	8,1%	2,4%	2,4%	10,0%	5,6%
	More than 4 RMS	3,6%	1,2%	2,0%	1,7%	2,1%
	Total	100,0%	100,0%	100,0%	100,0%	100,0%
GKS data	RMS, rub.	1166	746	707	868	
	Per capita income, rub.	4965	721	862	1707	
	Per capita income/ RMS	4,25	0,97	1,22	1,97	

Changing the criteria means that, for example, the needy families in 1998 had per capita income within the limits of 1 to 2 RMS, and in 1999 - within 0,5 to 1 RMS. As a result of this change we have got the similar to 1998 structure of groups of families. Nevertheless, we see the changes in regions: the growth of income differentiation in Moscow and "disappearance" of the supplied stratums in Ivanovo and Nizhni Novgorod.

An analysis of demographic structure of these groups of families gave us the main

"risk factors" which raises likelihood of a family to be poor or needy:

- Families with a plenty of children and dependents and families with several generations.

- Not full families, especially mother lone families.

- Families of pensioners or unemployed.

- Families of people without higher education and at an advanced age.

The structure of sources of incomes has not changed a lot during the last year, but we see changes within the groups. Though both in 1998, and in 1999 the proportion of social transfers received by the families declines along with the growth of income (approximately from 40% up to 5 %) and the share of wages and incomes from entrepreneurial activities and self-employment grows, but the proportion of the latter sources has been essentially reduced. The proportion of income from entrepreneurial activities in the group of the rich households reduced from 18% down to 9% and for self employment income - from 16% down to 6% at expense of wage share rising. In other groups the proportion of those incomes (not more than 3-4 %) remained invariable. Though it may be partly the result of changes in the structure of sampling.

Table 3. Composition of income groups in 1998 and 1999.

		Moscow	Ivanovo	N.Novgorod	Syktyvkar	Total
1998	'The poor'	24,6	17,9	29,3		24,2
	'The needy'	44,5	47,9	46,2		46,2
	'The independent'	21,2	26,1	18,4		21,7
	'The rich'	9,7	8,1	6,0		7,9
	Total	100,0	100,0	100,0		100,0
1999	'The poor'	32,6	28,3	27,3	24,9	28,2
	'The needy'	38,9	54,6	49,4	38,0	45,6
	'The independent'	16,7	13,5	18,9	25,3	18,5
	'The rich'	11,8	3,6	4,4	11,8	7,7
	Total	100,0	100,0	100,0	100,0	100,0

The structure of expenditures has not change much (incomes +/– savings) both on average and within the groups. The structure of expenditures in poor and rich families differs essentially. Purchases of food give more than three quarters of total expenditures in the poor families, including all other current expenses makes 93 %; rich households spend for purchases of the durables 7-8 % of their income, for real estate – 8-10 %, for other heavy purchases – 12-13%.

The most essential modification has happened in the particular sphere of household savings. In 1998, there were more households that had been saving than dissaving during the previous year in all income groups. For example, more than a half of rich families had increased their financial assets and only 6% of them – decreased, the amount of money saved was 12 times greater than the shortfall of savings. In 1999 there was the reverse tendency.

Table 4. The proportion of households had been saving or dissaving during the year (balance of income and expenditures) within the income groups.

		The proportion within the group		The ratio of the total amount of money saved to the amount of money dissaved during the year
		savers	dissavers	
1998	'The poor'	13,7	8,0	7,9
	'The needy'	19,0	8,0	2,0
	'The independent'	28,8	12,8	2,0
	'The rich'	55,8	5,8	12,0
	Total	23,3	7,1	4,1
1999	'The poor'	7,8	22,4	0,4
	'The needy'	18,0	34,8	0,2
	'The independent'	27,3	40,4	0,4
	'The rich'	39,0	37,3	0,4
	Total	18,7	35,2	0,3

Situation in the beginning of 1998 was really favourable to hope for positive dynamics in saving behavior. According to the data of our surveys, during 1997 7,4 % of families regularly put aside money and 21,2 % of them did it occasionally, from the beginning of 1998 up to August crisis - 14,4 and 33,9 % accordingly. Crisis in August has reduced these indicators almost 2 times.

The dynamics of household saving behavior, % of families
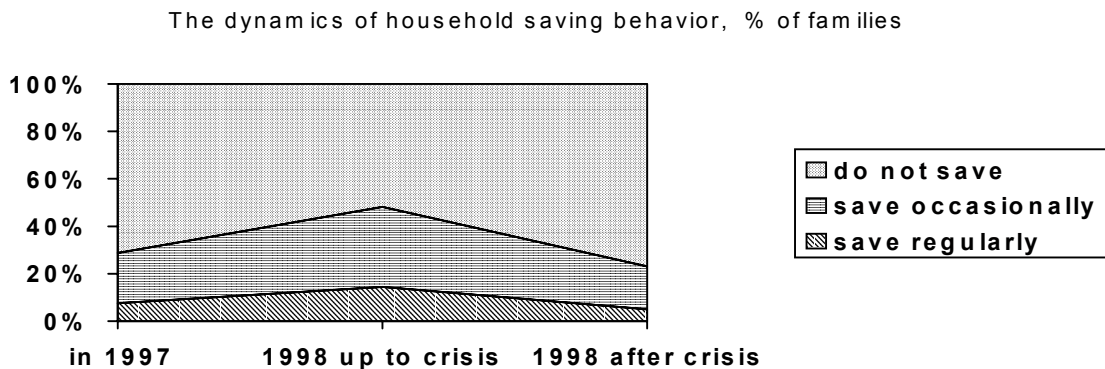
Consumption function estimation. According to our data, in the early year 1999 in comparison with a year before households started to smooth out their consumption by dissaving in the presence of the negative income shock. This behavior is consistent with the main prediction of the Permanent Income Hypothesis for the short-time period about the smoothing of the consumption function.

Table 5. The proportion of households with positive, negative and zero savings during the preceding year (% in columns).

Savings	Survey 1998	Survey 1999	Total
Consumption exceeds income (negative savings)	7,1%	35,2%	23,5%

Consumption exceeds income (zero savings)	69,6%	46,1%	55,9%
Income exceeds consumption (positive savings)	23,3%	18,7%	20,6%

As it could be seen from the Table 5, almost 70% in 1998 and 50% in 1999 of households had been living within their means. Reports about dissaving increased from 7,1% of households in 1998 up to 35,2% - in 1999. Only 18,7% of families had managed to save in 1999 in contrast to 23,3% - in 1998.

Figure 2. Incomes and consumption of households in 1998-1999.
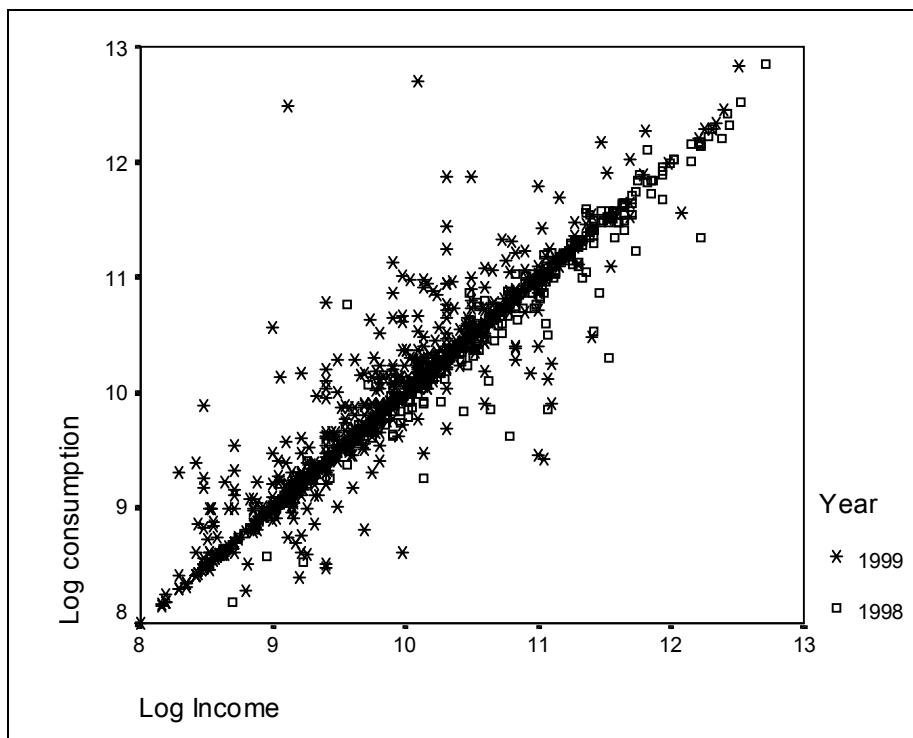
The Figure 2 shows that consumption exceeded incomes for a considerable proportion of households in the year 1999 in contrast to the year 1998. Functional dependence is close to the liner one in logarithmic scale at the angle of near to 45%.

For the quantitative estimation of the dependence of households' consumption from incomes and its shifting after the crisis we estimated econometric model (the description was given in the section 4).

The main variables of the model (the average values are presented in Appendix 3).

Financial variables of incomes and consumption:

- Total sum of family income (log) – the sum of all incomes of all family members had been obtained from all income sources during the preceding year in rubles and dollars, dollars were evaluated in rubles at the average rate. For the year 1998 all the financial variables (incomes, consumption, savings) were recalculated subject to regional deflators.

- The total sums of financial assets of a family at the first of the preceding year (log) – the sum of household's money assets in deposits (Sberbank, commercial banks) and in cash (rubles and dollars). Dollars were evaluated in rubles at the official rate in March 1999.

- Annual consumption of a family (log) was calculated as a difference between total sum of annual incomes and total annual savings. Total annual savings were calculated as a difference between the total sum of assets at the first and at the end of the preceding year.

Wealth variables:

- Living space of the apartments per person

- If a summer house is available

- If a garden plot is available

- If a car is available

Socio-demographic variables:

- The number of members in a family sharing the common budget

- The number of children under 16 years

- The number of employed members in a family

- The gender of the bread-winner of a family (a person whose income constitutes the biggest proportion in the total family income)

- The age of the bread-winner /10, age/10 squared

- If the bread-winner has high education.

Consumption function estimation defines the contribution of every factor to the increase of family consumption; the empirical results of the regression analysis are presented in the following table.

Table 6. Consumption function estimation. Dependent variable - logarithm of households' annual consumption.

	Surveys 1998,1999	Survey 1998	Survey 1999
(Constant)	,583 *** (4,728)	,209 * (1,806)	,874 *** (4,609)
logarithm of household's annual income	,935 *** (77,471)	,977 *** (92,402)	,893 *** (47,487)
logarithm of household's financial assets at the first of the year	,018 *** (11,289)	-,003 ** (-2,223)	,034 *** (13,746)
Living space of the apartments per person	-,001 (-1,393)	,000 (-,504)	-,001 (-,853)
If a summer house is available (yes=1)	-,006 (-,403)	-,017 (-1,311)	-,010 (-,405)
If a garden plot is available (yes=1)	,007 (,450)	,002 (,156)	,009 (,387)
If a car is available (yes=1)	,035 ** (2,022)	-,022 (-1,417)	,067 ** (2,507)
The number of members in a family sharing the common budget	,017 * (1,669)	,011 (1,239)	,028 * (1,868)
The number of children under 16 years	-,007 (-,534)	,010 (,795)	-,029 (-1,418)
The number of employed members in a family	-,018 * (-1,711)	,006 (,605)	-,040 ** (-2,555)
The gender of the bread-winner of a family (male =1)	,011 (,810)	,009 (,722)	,030 (1,366)
The age of the bread-winner /10	,039 (1,483)	-,016 (-,696)	,066 (1,613)
The age of the bread-winner /10 squared	-,006 ** (-2,206)	,002 (,796)	-,010 ** (-2,418)
If the bread-winner has high education (yes=1)	-,004 (-,288)	,005 (,384)	-,013 (-,605)
Moscow (yes=1)	-,006	-,009	,040

	(-,341)	(-,567)	(1,328)
N.Novgorod (yes=1)	-,011	,009	-,003
	(-,661)	(,663)	(-,096)
Syktyvkar (yes=1)	-,008	-	,013
	(-,353)		(,471)
Year of 1998 (yes=1)	-,024	-	-
	(-1,401)		
F	1114,589 ***	1393,68 ***	445,28 ***
R^2_{adj}	0,924	0,969	0,891
The number of families	1530	659	856

*** - statistically significant at the 0,001 level, ** - statistically significant at the 0,05 level, * - statistically significant at the 0,1 level.

According to estimation, we see that the consumption function has been changed. The changes are more vivid when the estimations were made for each year separately, because the curve has become steeper, but has not been shifted in parallel.

Figure 2 gives a scatter plot of annual households' consumption and income where we see that the curve became steeper (because of consumption on balance). Empirical estimation of the consumption function without including of the variable of total sum of assets at the first of the year confirms the visual observations. Including this variable into equation shows that in the year 1998 income was practically the only determinant of consumption, coefficient was close to 1. The contribution of the amount of assets was not big, and the rest of factors (socio-demographic) had no influence on consumption. At the same time in the year 1999 the impact of income on consumption had reduced (the coefficient and the slope of the curve declined). The influence of accumulated assets on consumption significantly increased, they substituted the reduced income in order to keep household consumption as invariable as possible, and in addition the family characteristics started to be influential.

It means that the reduced post-crisis level of incomes was not considered to be 'normal', income losses were seen as negative transitory income which entailed the process of dissaving.

The main types of assets and wealth of households. In the theory, the propensity to save is closely connected to accumulated assets, or wealth of the family, however this relationship is ambiguous. As a rule, the material well being usually is related to the level of income. It is possible to assume, that rich families having a high level of income, large apartments, cars, country-houses etc. are more likely to put spare cash in financial forms of savings; on the other hand, the desire to improve living conditions might result in accumulation of sizeable assets and vice versa in the case of recent purchase of an apartment the household might even tick. At the same time, even bad housing conditions can not stimulate poor families to save, as they do not have possibility to accumulate for that improving.

In the group of rich families (in 1999) owning of the dwellings was more popular – only 25% of rich families lived in non-privatized apartments, whereas in the other groups - about a half. Though the major part of apartments was passed to households via free of charge privatization (50 %). The sizable portion of the rich families (6,8 %) rented their apartments. Therewith 17,5 % of independent and rich families (in contrast to 8,5 % of the needy) had the second dwelling.

Approximately a quarter of families in each group had a plot, from 23% (among 'the poor') up to 40% (among 'the independent') had a country house. During 1993-1999 less than 7% of families had purchased a flat, less than 8 % - summerhouse, 12,4 % - a car, the majority of these kinds of purchases (from 2/3 to ¾) had been done before 1998. The differences among the groups were not very big in the case of housing conditions, they are much bigger if cars had been taken into account. Only 13,6% poor families had a car, and 0,5 % had bought it during last year, 4,5 % did it in 1992-96 years, and the other had bought their cars even earlier. In contrast to them 52,1 % of the rich families had a car, and 42,4 % had bought it after 1992. As to durables, needy and rich families differed

very little in possession of a standard set of household appliances (TV set, refrigerator, washing machine) and essentially in possession and buying videotape recorders, microwaves, dishwashers, computers. The crisis resulted in the reduction of buying of furniture, household appliances, and expenses for redecorating flats and construction. The proportion of families, which were engaged in those kinds of activities, had reduced half to the level at the beginning of the year 1998.

In the year 1998, approximately each fifth family (19,6%) had an insurance policy (among the rich - 34,5 %, and two thirds of them – several policies of different kind). In 1999, 17% of families had an insurance policy (among the rich – 24,7%). In 1999, rich households had property insurance policies 2,5 times more often than poor (4 times - in 1998), and additional medical insurance – 6 times (11 times – in 1998). For poor families there was a tendency to insure their lives (the fact that has appeared only in 1999) and against accidents.

Relatively considerable amount of families had shares and securities (15,4 % in 1998, 16,9% - in 1999), but only half of families considered that those securities could be sold, and a little less - could estimate their price. The overwhelming majority of securities' holders had the shares of the enterprises where they worked, especially among the needy families (69, 4% (81 % - in 1998) among poor households and 50% (38,5 % - in 1998) among rich families). Rich families had shares of various financial companies and funds - 30% among all holders of securities. By the share holders' estimations, the shares of the enterprises were most liquid (about 60 % of their owners considered that they were able to sell them), but this assurance might be unrealistic, as the significant part of such families, especially needy, had no experience of operations on a capital market. It is also confirmed by significant share of those who did not know, whether their assets were liquid (mostly among the poor and the needy). The highest share of those who

supposed that their securities could be sold (though with some difficulties) was among the rich families (70%).

In March 1999, 42,5 % of families had financial assets in institutional form (except for the securities of different kind and debts). Ruble deposits in Sberbank, cash rubles and cash dollars were the most popular forms of all financial assets. Such forms as ruble deposits in commercial banks, dollar deposits in Sberbank and in commercial banks were used considerably less often. It is noteworthy that there was the difference in estimations of the situation in March 1998 in two surveys, especially about deposits in Sberbank and cash currency. They might be explained in different ways: statistically (sampling effect) and psychologically (retrospective effect).

The table 7. The proportion of households with the particular type of assets (%)

		1999			1998
		Right now	Before the crisis in August	A year ago	Right now
		March 99	August 98	March 98	March 98
1	*Cash rubles*	40,9	58,4	60,3	41,9
2	*Cash dollars*	22,4	24,7	24,0	18,9
3	*Ruble deposits in Sberbank*	44,6	46,0	45,3	72,7
4	*Dollar deposits in Sberbank*	1,8	1,8	1,2	4,3
5	*Ruble deposits in commercial bank*	4,7	7,0	7,1	5,9
6	*Dollar deposits in commercial bank*	1,9	2,2	2,1	1,6
7	*Securities of different kind*	20,9	20,6	20,7	_
8	*Rubles lent*	26,9	12,9	11,7	_
9	*Dollars lent*	7,0	3,5	2,2	_
	No assets from the list 1-6	57,5	48,9	45,7	56,3

According to the data the total amount of assets has been reduced: cash rubles – three times less, cash dollars – two times less, deposits in Sberbank – one and a half times less. We see evident dissaving activity.

Table 8. The total sum of money in different types of assets, survey data 1999

		Survey 1999		
		Right now	Before the crisis in August	A year ago
		March 99	August 98	March 98
1	*Rubles in cash*	571 890	1 079 380	1 577 552
2	*Dollars in cash*	80 303	185 427	198 117
3	*Ruble deposits in Sberbank*	648 324	825 611	946 671
4	*Dollar deposits in Sberbank*	7 050	17 640	6 150
5	*Ruble deposits in comm. banks*	94 254	142 050	140 102
6	*Dollar deposits in comm. banks*	7 900	15 500	14 000
7	*Securities of different kind*	157 037	274 372	361 607
8	*Rubles lent*	326 425	201 150	108 460
9	*Dollars lent*	36 435	27 200	29 800
	The number of families =950			

As far as shares in financial funds and financial credit instruments are concerned, people frequently were not able to give pecuniary estimation to these assets. They even did not know whether they could get back any sum of money. The same situation was for the sums of money that had been landed by a family to someone else. As a result, people did not consider these assets as their real financial assets. Landing money to physical bodies had no interest motives, rather the act of good will and help. So sometimes we will exclude these assets when analyzing household portfolio behavior.

The dynamics of assets composition of the families in different income groups. The diversification of the household portfolio of financial assets is not a very

Figure 3. Portfolio of assets in the different groups of households, %, 1999

⊞ Ruble deposits in Sberbank	⊠ Shares and securities	⊡ Cash rubles
⊡ Cash dollars	■ Dollar deposits in Sberbank	⊞ Ruble deposits in Com. bank
⊞ Dollar deposits in Com. bank	⊡ Rubles lended	⊡ Dollars lended
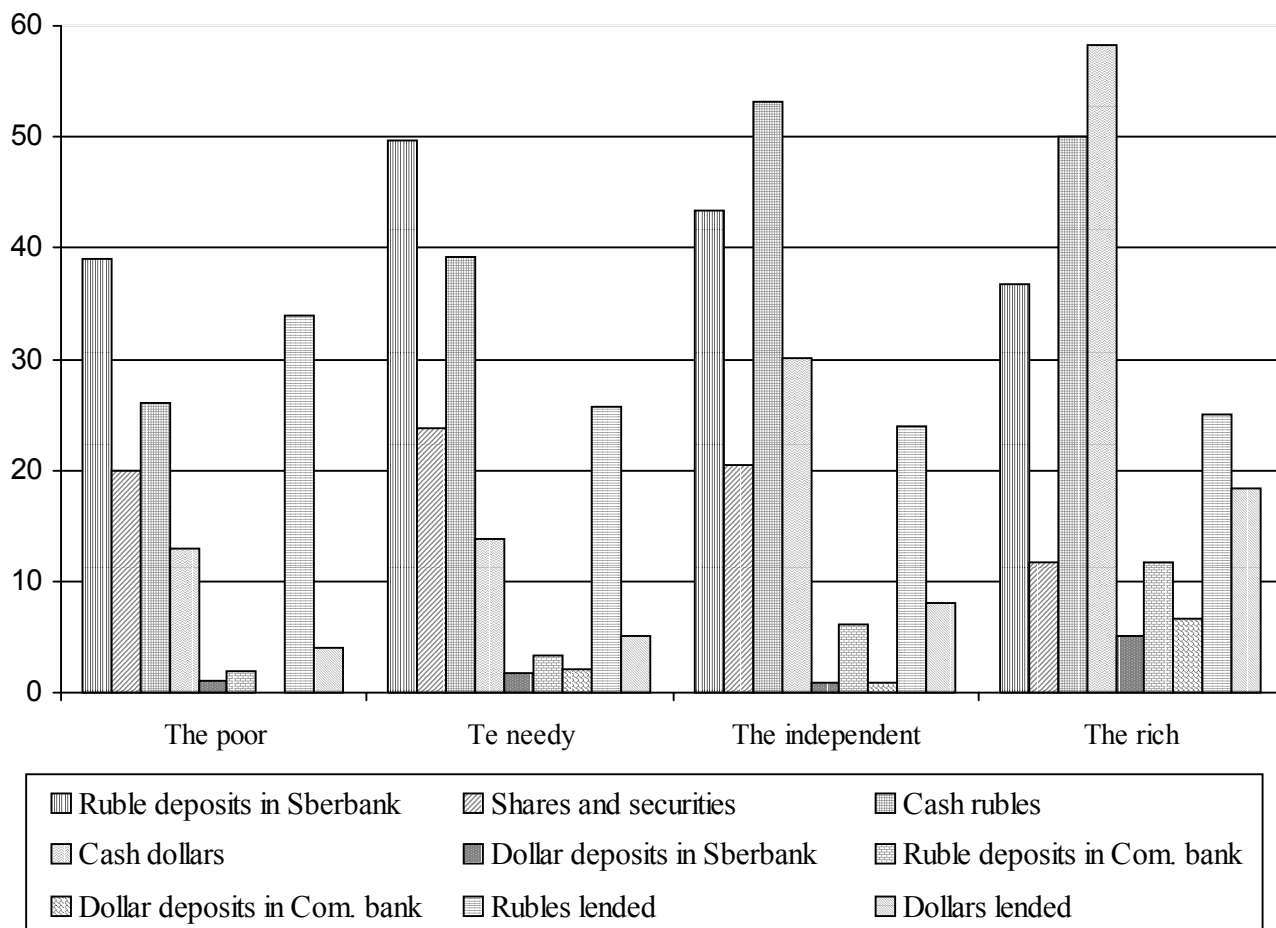
popular strategy for households in Russia: 42,5 % of households which had any asset, including 26,2 % - who invested into one type of asset, 12,6 % - in two, 3,4 % - in three, 0,3 % - in four (out of possible 6 kinds). And the diversity of the forms of assets could be found only in the group of rich families that mostly lived in Moscow. The asset composition was changing along with increasing of household's income – the cash rubles and dollars and deposits in commercial banks were rising and deposits in Sberbank were reducing.

Table 9. The proportion of households in each income group with the particular type of assets (%)

	In March, 1999				
	The poor	*The needy*	*The independent*	*The rich*	*Total*
Rubles in cash	26,0	39,2	53,1	50,0	40,9
Dollars in cash	13,0	13,8	30,1	58,3	22,4
Ruble deposits in Sberbank	39,0	49,6	43,4	36,7	44,6
Dollar deposits in Sberbank	1,0	1,7	,9	5,0	1,8
Ruble deposits in comm. banks	2,0	3,3	6,2	11,7	4,7
Dollar deposits in comm. banks	,0	2,1	,9	6,7	1,9
Securities of different kind	20,0	23,8	20,4	11,7	20,9
Rubles lent	34,0	25,8	23,9	25,0	26,9
Dollars lent	4,0	5,0	8,0	18,3	7,0
The number of families in the group	268	433	176	73	950

Tables 10-12 shows the dynamic of the average size of asset among the main types of financial assets of households. It is difficult to estimate the dynamics of deposits in dollars in Sberbank and commercial banks, because very few households reported about this type of holding.

First of all it is obvious that there was two-three times reduction in the amount of money per family in all types of assets, excepting lent money. The reduction was bigger for the low-income households (2-4 times less). The decline in the number of asset holders had happened. So among the poor and the needy the number of cash holders reduced 1,5-2 times. That is why the statistics only for holders looks better.

The orientation towards Sberbank has been kept in poor and needy households; there was a reduction of the size of the average deposit while the number of depositors practically had not changed. There was no reorientation from cash assets in rubles towards the dollar ones, rather the bulk reduction in money assets which were used to compensate the negative income shocks.

The rich and independent households were more settled. The number of cash holders had not changed a lot. The rich families chose upon dollars in cash. The number of dollars' holders even grew among them. The size of average cash stock (both in rubles and dollars) declined, though the sums on the bank deposits had not changed. They even grew a bit in Sberbank.

There was the increase in number of the families who operated with private credits and debts. Borrowed current assets were important financial tool in poor and needy families, poor families borrowed more often, but less in amount, the needy – quite the contrary. Loans in rubles predominated. In the independent households loans exceeded credits, and rubles and dollars were used equally. So we see that mutual crediting was widespread among the households, that was one of the possible ways of coping with the consequences of the crisis.

Table 10. The sum of assets of different types per family on average

	1999 survey				
	The poor	The needy	The independent	The rich	Total
The sum of ruble assets in cash					
Right now (in March 1999)	187,45	399,49	1098,19	2604,48	627,76
Before the crisis in August	551,76	831,50	2144,57	3887,69	1219,57
A year ago (in March 1998)	848,03	1077,47	2568,52	7943,08	1797,20
The sum of dollar assets in cash					
Right now (in March 1999)	31,32	19,48	134,64	614,93	86,84
Before the crisis in August	24,82	86,42	203,72	1822,33	204,67
A year ago (in March 1998)	38,88	111,33	155,72	1992,07	218,67
Ruble deposits in Sberbank					
Right now (in March 1999)	325,76	536,92	1006,20	2426,20	707,78
Before the crisis in August	469,58	806,01	1263,59	2407,25	915,22
A year ago (in March 1998)	708,60	933,14	1450,78	2072,86	1053,09
Dollar deposits in Sberbank					
Right now (in March 1999)	7,46	2,92	4,57	41,67	7,48
Before the crisis in August	7,46	26,03	8,57	41,67	18,71
A year ago (in March 1998)	7,49	,35	5,75	41,10	6,53
Ruble deposits in comm. banks					
Right now (in March 1999)	13,06	35,56	109,20	784,72	99,95

Before the crisis in August	48,51	66,71	192,53	929,58	149,89
A year ago (in March 1998)	51,13	69,25	149,71	1000,00	148,45
Dollar deposits in comm. banks					
Right now (in March 1999)	,00	7,94	,00	62,50	8,39
Before the crisis in August	,00	6,54	,00	181,43	16,49
A year ago (in March 1998)	,00	5,83	2,87	157,14	14,88
Securities of different kind, rub.					
Right now (in March 1999)	69,70	156,66	110,49	805,71	173,14
Before the crisis in August	82,56	327,90	371,33	864,71	304,86
A year ago (in March 1998)	109,38	456,75	433,66	1098,55	400,45
Rubles lent					
Right now (in March 1999)	197,52	128,19	643,51	1491,32	349,49
Before the crisis in August	89,51	96,66	579,02	507,04	216,06
A year ago (in March 1998)	86,02	59,72	217,84	323,94	116,55
Dollars lent					
Right now (in March 1999)	2,07	29,05	53,74	194,38	38,84
Before the crisis in August	,00	19,95	17,24	218,06	28,97
A year ago (in March 1998)	,00	44,96	,57	145,83	31,70
Household's debt at the moment of survey					
In rubles	221,69	309,95	325,87	63,89	268,89
In dollars	10,82	14,52	50,98	32,53	21,58

Table 11. The sums of assets of different types per household having that type of asset on average

	1999 survey				
	The poor	**The needy**	**The independ dent**	**The rich**	**Total**
The sum of ruble assets in cash					
Right now (in March 1999)	2347,62	2072,37	3574,51	6980,00	3231,02
Before the crisis in August	2993,62	2811,61	5861,83	8423,33	4223,06
A year ago (in March 1998)	3900,95	3224,24	6935,00	16654,84	5656,66
The sum of dollar assets in cash					
Right now (in March 1999)	696,83	316,96	894,00	1420,69	871,23
Before the crisis in August	655,20	1165,32	1193,21	4205,38	1951,86
A year ago (in March 1998)	643,88	1254,73	994,23	5501,90	1981,17
Ruble deposits in Sberbank					
Right now (in March 1999)	2763,71	2107,17	4175,73	9066,32	3307,78
Before the crisis in August	3685,52	2943,39	5453,39	8742,11	4082,23
A year ago (in March 1998)	4424,44	3302,52	5984,48	8535,29	4439,77
Dollar deposits in Sberbank					
Right now (in March 1999)	2000,00	416,67	800,00	3000,00	1175,00
Before the crisis in August	2000,00	3713,33	750,00	3000,00	2520,00
A year ago (in March 1998)	2000,00	150,00	1000,00	3000,00	1537,50
Ruble deposits in comm. banks					
Right now (in March 1999)	1750,00	1906,75	3166,67	9416,67	4284,27
Before the crisis in August	3250,00	2379,17	3350,00	9428,57	4274,24
A year ago (in March 1998)	1957,43	2681,82	3237,50	11666,67	4346,94
Dollar deposits in comm. banks					
Right now (in March 1999)		850,00		1500,00	1128,57
Before the crisis in August		933,33		3175,00	2214,29
A year ago (in March 1998)		625,00	500,00	3666,67	1750,00
Securities of different kind, rub.					
Right now (in March 1999)	1309,43	1779,83	1402,38	11280,00	2309,37
Before the crisis in August	1545,14	4315,61	3538,59	14700,00	4157,15
A year ago (in March 1998)	1692,18	4904,05	3927,00	18950,00	4696,19
Rubles lent					
Right now (in March 1999)	1641,88	1015,85	4478,80	7669,64	2626,81
Before the crisis in August	1593,33	1928,57	6716,67	6000,00	3528,95
A year ago (in March 1998)	1514,00	1482,35	2660,71	4600,00	2120,78
Dollars lent					
Right now (in March 1999)	275,00	1371,67	1168,75	1290,00	1214,50
Before the crisis in August		2125,00	1000,00	2242,86	1942,86
A year ago (in March 1998)		4800,00	100,00	2625,00	3311,11
Household's debt at the moment of survey					
In rubles	809,79	2081,11	2075,93	1533,3	1515,55
In dollars	362,5	617,0	882,0	339,33	579,0

Table 12. The number of families in each income group having the particular type of asset (N, %)

	1999 survey							
	The poor		The needy		The independent		The rich	
	N	%	N	%	N	%	N	%
The sum of ruble assets in cash								
Right now (in March 1999)	21	8,0	80	19,3	51	30,7	25	37,3
Before the crisis in August	47	18,4	118	29,6	60	36,6	30	46,2
A year ago (in March 1998)	55	21,7	132	33,4	60	37,0	31	47,7
The sum of dollar assets in cash								
Right now (in March 1999)	12	4,5	26	6,1	25	15,1	29	43,3
Before the crisis in August	10	3,8	31	7,4	28	17,1	26	43,3
A year ago (in March 1998)	16	6,0	37	8,9	26	15,7	21	36,2
Ruble deposits in Sberbank								
Right now (in March 1999)	31	11,8	106	25,5	40	24,1	19	26,8
Before the crisis in August	33	12,7	112	27,4	38	23,2	19	27,5
A year ago (in March 1998)	41	16,0	115	28,3	40	24,2	17	24,3
Dollar deposits in Sberbank								
Right now (in March 1999)	1	,4	3	,7	1	,6	1	1,4
Before the crisis in August	1	,4	3	,7	2	1,1	1	1,4
A year ago (in March 1998)	1	,4	1	,2	1	,6	1	1,4
Ruble deposits in comm. banks								
Right now (in March 1999)	2	,7	8	1,9	6	3,4	6	8,3
Before the crisis in August	4	1,5	12	2,8	10	5,7	7	9,9
A year ago (in March 1998)	7	2,6	11	2,6	8	4,6	6	8,6
Dollar deposits in comm. banks								
Right now (in March 1999)			4	,9			3	4,2
Before the crisis in August			3	,7			4	5,7
A year ago (in March 1998)			4	,9	1	,6	3	4,3
Securities of different kind, rub.								
Right now (in March 1999)	14	5,3	36	8,8	13	7,9	5	7,1
Before the crisis in August	14	5,3	31	7,6	17	10,5	4	5,9
A year ago (in March 1998)	17	6,5	38	9,3	18	11,0	4	5,8
Rubles lent								
Right now (in March 1999)	32	12,0	53	12,6	25	14,4	14	19,4
Before the crisis in August	15	5,6	21	5,0	15	8,6	6	8,5
A year ago (in March 1998)	15	5,7	17	4,0	14	8,2	5	7,0
Dollars lent								
Right now (in March 1999)	2	,8	9	2,1	8	4,6	11	15,1
Before the crisis in August			4	,9	3	1,7	7	9,7
A year ago (in March 1998)			4	,9	1	,6	4	5,6
Household's debt at the moment of survey								
In rubles	72	27,4	63	14,9	27	15,7	3	4,2
In dollars	8	3,0	10	2,4	10	5,8	7	9,6

Both among the poor and the rich there was the same share (21,3 %) of families whose members in 1999 used Sberbank or commercial bank to transfer wages, pensions or benefits. Pension deposits were predominated in the group of poor households and current accounts – in the rich families. Time deposits and special accounts were relatively unusual and also well-grounded clients used them. These outcomes do not conflict with official statistic data, though we are not able to compare them directly.

The table 13. Households' bank accounts (in % of the group):

	The poor	The needy	The independent.	The rich.	Total
Current accounts	6,7	13,9	13,7	29,6	13,0
Time deposits with monthly interest payments	1,5	4,0	5,7	10,0	4,1
Time pension and pension deposits	13,4	18,6	14,3	8,5	15,5
Time deposits	1,5	5,0	6,3	19,7	5,3
Deposits for special purposes (for a child and the like)	2,2	4,0	5,7	7,0	4,1
Credit cards deposits	0,4	0,7	1,1	4,2	1,0
Do not have any bank accounts	86,5	79,3	82,4	77,9	81,7

81,7 % of families did not have any bank accounts (77,9 % among 'the rich' and 86,5 % among 'the poor').

Factors of availability of the particular type of asset. For analyzing of the influence of a number of factors on the availability of the particular type of asset in the household we run the probit regression. The dependent variable - if the household had the particular type of asset (Appendix 4). Household per capita income was the almost only explanatory variable in all regression estimations. It had the positive influence on all forms of assets. Though it was interesting that it did not exerted influence on different forms of savings in terms of flow.

The performances of a family and its main supporter were important as a determinant for holdings, even one kind of them (cash money or bank accounts), in a

family. If a family was large, its main supporter was a man, and he was young and married, the family was more probable to have financial assets. There was a great deal of uncertainty about the impact of households' characteristics on the estimations of risk and profitability.

Cash assets in rubles were more likely for families with a highly educated man as a head of it and less likely for families of the professionals. Gender was influencing on the amount of assets, but age and psychological variables – on savings. Cash dollars were more likely for families of entrepreneurs, especially in Moscow and in Ivanovo. Cash dollar holders did not consider the risk of bank deposits in commercial banks as a higher one. The sky-high expectations of the price rise dynamic had positive impact on the amount of cash dollar holdings, gender and position of the main supporter of a family – on cash dollar savings. Wage and pension arrears during the post-crisis period had influenced on cash dollar holdings.

Deposits in Sberbank were more likely for elderly men, who were at a loss while estimating risk and profitability of assets, though they thought that the risk of depositing in Sberbank was rather high. The same variables had positive impact on the size of the deposit, and only some of them – on the actual increase of the bank balance. Those who had deposits in commercial bank or dollar deposits in Sberbank were more likely to be employed and to be experienced with deposit losses in commercial banks. The size of this kind of assets was dependent on the price rise forecasts and deposit increase – wage arrears before the crisis. Professionals and businessmen were more likely to invest money into mutual funds, as well as those who considered durables and gold as risky investments.

Managers and entrepreneurs were more likely to lend money in both terms (especially dollars). Debts in rubles were associated with households of elderly people,

with high proportion of under age members: in dollars – those who was paid in dollars.

When the whole sum of savings (in terms of flow) is concerned, there was a set of explanatory variables: household per capita income, ruble assets, experienced losses of deposits, and purchases of durables. It means that financial saving and accumulation of material wealth should not be considered as competing but rather complementary aims of rich households.

As a whole it is necessary to emphasize that a set of factors that was influential a year ago in 1999 had appeared to become insignificant: wage arrears, the level of education of the main supporter of a family, income in dollars. The relationship between risk and profitability was not empirically found out. Non of psychological variables was influential.

Consumption and dissaving after crisis. Let's consider what the assets were spent for during the period from March 1998 to March 1999? First of all we need to pick up the families whose sum of assets in March 1999 was less than a year before. There were not financial assets of any kind in 39,7 % of families in March 1998 (58,6% among the poor and 15,1% among the rich), and 8,9 % of families had not been dissaving during previous year (4,5 % among the poor and 11 % among the rich). The rest of all families had been dissaving partly or entirely. The greatest part of families had used their savings for buying food (79,8 % of all, 61,1 % - among the rich) and other current expenses (71,8% and 68,5% accordingly). It confirms the hypothesis that savings are used for smoothing current consumption in face of minor income shocks.

Then, there were expenses for medical treatment - 32,9 % of families had to dissave for this purpose. The poor did it even more often than the rich did if we look not at the sums, but at the frequency of expenses of this kind. Among the poor and the needy there was a great proportion of elderly people and children. Savings were used for

purchases of durables as well (23,7 %). Among the rich families 42,6 % of households had reported about these type of actions. Many households called for special events (25,5 %) and education fees as the reasons for dissaving. There was also expenditures for rest (17,1 % of all families, 46,3 % - among the rich) and for real estate investments or redecorating (15,8 % and 35,2 % accordingly). And only a few 4,5 % (1 % among the poor, 14,8 % among the rich) had bought a car or had invested into their own business (3,3 % of all, 7,4 %among the rich).

In the face of sharp reduction in household real income the major part of total assets was utilized for maintenance of their every day consumption pattern: if the poor and the needy had used them for food and primary necessities, the independent and the rich had transferred them partly into material assets (a car, durables) and partly into 'human capital investments' (education, health, rest).

What were the main forms of 'saving the assets'? First of all 36,6% of households (47,1% among the poor and 19,8 among the rich) there had been no problem because of no assets at that moment. The rest had transformed their money assets mostly into stock of food and articles of prime necessity. Though the period when these stocks had been done was not long - when prices started to rise the demand had reduced. Poor families (85,2 %) had used this pattern more often than the rich (58,7 %). For the rich families it had been more likely to buy cars, durables or real estate. Each fourth family among the rich (11,1 % among poor) reported about making these purchases. Dollars had been also popular among the rich families (32,6 % against 14,8 % among the poor). Poor families had used their precautionary assets for smoothing their consumption in the face of minor income shock in post-crisis period. More wealthy families with greater amount of assets had transferred the structure of their assets trying to invest money in the moving up assets.

Stockpiling of food had not become an everyday practice as it had used to be in 1991, however 46,6 % of families reported that they had been doing it occasionally after crisis (of necessities - 19,3 %, of durables - 5,3%). But it was even less often than in the 1998 survey, when 58,6 % of families did it.

Durables' and real estate purchases had also experienced the influence of two-fold tendencies: they were attractive as the form of asset holding, but the need to smooth the consumption because of income reduction had reduced in necessity to have ready assets. Fall in income also had reduced the possibility to make those consumer purchases. Comparing the data about these purchases before the crisis and after it (from the 1999 survey) we see that the substantial reduction of durables' purchases had taken place. Home appliances - from 8,7 % down to 4 % for all families (from 28,8 % down to 15,1 % for the rich), TV sets, video and tape recorders - from 10,4 % down to 3,5 % for all households (from 32,2% down to 13,7 % for the rich), winter clothes - from 18,4 % down to 14,0 % (had even increased for the rich), and furniture - from 3,3 % down to 2,0 % (from 12,3 % down to 5,5 % for the rich). As to apartments, cars, summerhouses, the ratio of those who had purchased them before the crisis had not been large (2,1 % - for cars, 1,7 % - for apartments, 0,4 % - for summerhouses) and it had not decreased as well. There was also the decrease in the proportion of those who had spent money for redecoration of their flats or houses and construction - from 10,9 % down to 6% (from 19,2 % down to 12,5 % - for the rich).

7. Conclusions

One year between two our surveys (February-March 1998, March 1999) because of the August crisis 1998 has proved to be turning in many respects, and first of all in the field of household incomes, consumption and savings. The main aims of the research

were to shed light on the changes in household saving and portfolio behavior.

Among the main macro consequences of the crisis in the household sector there were:

- At the middle of March 1999 the exchange rate had grown since August 1998 3,5 times. The index of consumer prices since August 1998 till March 1999 came to 179,2 %. In the first quarter of 1999 the speed of inflation was slackened. The annual growth of consumer prices in 1999 appeared to be much less than it was forecasted in the beginning of the year. In conjunction with stability of exchange rate it had reduced in some valuation of ruble.

- The withdrawing money from bank accounts, which started in June 1998 and after August 17 had become stronger, stopped. The total bank balances grew to increase, but only in Sberbank, the withdrawing money from bank accounts in commercial banks continued. In March, 1999 for the first time from the beginning of the year there was an increase in net cash dollars balance: households bought more cash dollars than sold.

- The greatest damage was caused by crisis to the largest Moscow banks, but it had positive consequences in the banking sphere. In the early 1999 Russian financial markets stabilized, the lowering of the interest rates of all financial trading had happened.

- The banking system became more productive oriented, that was one of the consequences of depreciating of the state bonds and revaluation of the currency credits. The lowering of the share of individual deposits stimulated the banking system to credit enterprises.

- The modification of economic environment after August crisis was happening in the presence of the increase of the demand for domestics in the home market. Displacing barter with money interplant payments was the evidence of the improving of the financial state of industrial firms.

- After the crisis there were positive changes in the balance of payments: if in the first half of 1998 the current transactions in the balance of payments of

Russia were negative — minus 5,6 bln. doll., one year later it became positive - almost 13 bln.doll.

The impact on the household incomes (macro tendencies).

- Some improving of economic activities during the first quarter of 1999 did not result in evident changes on the labour market where situation remained tight. At the end of March 1999 the total number of the unemployed (using the methodology of ILO) increased by 18,7 % during a year.

- According to the official statistic macro data real household incomes in the first quarter of 1999 were came to 73 % of their level a year before. According to our data, it was 50% reduction. The estimation variance might be explained by the absence of the richest families in our sample, income understatements and non-representativeness of our sample for all Russia.

- According to the data of the official statistics household expenses steadily exceeded 80 % of the total money incomes of households. The decreasing of the purchasing power of personal incomes resulted in forced rise of the expenses for food at the expense of nonfoods and services. These tendencies characterized the behavior of the majority of households, and it became especially evident in the low-income groups.

Thus there were several factors of the maintaining consumption at the similar to pre-crisis level.

First, permanent settlements of the wage, pension, and other arrears compensated the decline of real wages and incomes of the population.

Secondly, there was a considerable decrease in saving rates. If during a half of a year before the crisis average saving rate according to official data was equal to 18,5%, eight months after August 1998, including August - only 8%. For many families it meant dissaving. The alternate estimation of the share of savings in household incomes (subject

to the net increase of cash dollars on hand) in the post-crisis period was close to zero. According to our data, the average saving rate had become negative. It reduced from 7,4% in March 1998 down to – 3,7%.

Thirdly, the decreasing of purchasing power of household assets in rubles was partly compensated by the rising of the ruble valuation of household assets in dollars. However, only those households which kept their financial assets in cash dollars on the eve of crisis were able to use this advantage. As a result, resources were redistributed in favor of pre-crisis cash dollars' holders.

Finally, the informal employment in the market and within the household sectors created a stream of unregistered money and in-kind incomes.

The conclusions from the analysis of our data 1998, 1999:

- The main trends in the dynamics of incomes and savings from our data in the main consist with macro estimations.

- Econometric estimation of the consumption function resulted in a conclusion that after the financial crisis there was a shift on the consumption curve and a change in slope.

- In the year 1998 income was practically the only determinant of consumption, coefficient was close to 1. The contribution of the amount of assets was not big, and the rest of factors (socio-demographic) had no influence on consumption.

- In the year 1999 the impact of income on consumption had reduced (the coefficient and the slope of the curve declined). The influence of accumulated assets on consumption significantly increased, they substituted the reduced income in order to keep household consumption as invariable as possible, and in addition the family characteristics started to be influential.

- According to our data, in the early year 1999 in comparison with a year before households started to smooth out their consumption by dissaving in the presence of the negative income shock. This behavior was consistent with the main prediction of the Permanent Income Hypothesis for the short-time period about the smoothing of consumption. The reduction in incomes was interpreted as the negative transitory income and was followed by negative savings. We can say that after the crisis PIH for the short-run period fits the data better.

- The unification of portfolio composition had happened. As a whole it is necessary to emphasize that a set of factors that was influential a year ago in 1999 had appeared to become insignificant. The per capita family income had remained to be the most influential factor of portfolio behavior, the impact of other variables was not well defined and empirically consistent. There still remains a good deal of uncertainty about the impact of estimations of risk and profitability on the portfolio behavior. Non of psychological variables was influential.

As a whole, the sharply reduction of household real incomes had caused the using of the accumulated financial assets for current needs in order to maintain the usual level of consumption. The number of households who had any financial assets had reduced and the unification of the forms of financial savings had happened. The change in economic situation had resulted in the reduction of determinants that had influenced on the portfolio composition in comparison with the outcomes of our survey in 1998.

In our opinion, there were two major financial strategies that can be distinguished among the households with different per capita income level. Active forward-looking saving and consumption behavior, which had decrease in post-crisis period, was appropriated to the wealthy families only. This group represents not more than 10% of households in our sampling. The saving behavior of the medium strata of households is

not forward-looking, they are guarded by precautionary motives mostly, and their smoothing of the consumption is short-termed. The incomes of the poorest families are hardly enough for current consumption and so they are not forward-looking and active in financial behavior, that is guarded by survival motives only.

8. Bibliography

1. Красильникова М. Склонность к сбережениям и потреблению // Экономические и социальные перемены: Мониторинг общественного мнения. Москва, ВЦИОМ, 1997, N 3.
2. Никифоров, Л.В.; Кузнецова, Т.Е.; Лыкова, Л.Н. Использование финансовых накоплений населения в инвестиционных целях // Пробл. прогнозирования. - М., 1996. - Вып 3. - С. 93-103.
3. Николаенко С.А. Личные сбережения населения // Экономический журнал ВШЭ, том 2, №4.
4. Рябикин, В.И.; Семенов, В.П. Доходность денежных сбережений в инфляционной экономике // Финансы . - М., 1996. - N 10. - С. 54-57.
5. Сбережения населения Российской Федерации. М., 1997.
6. Урнов М. Существует ли инвестиционный потенциал сбережений населения России? // Экономические и социальные перемены: Мониторинг общественного мнения. Москва, ВЦИОМ, 1997, N 3.
7. Финансовый потенциал населения // О-во и экономика. - М., 1996. - N7. - С. 91-139.
8. Яковлев,А. Отношение частных вкладчиков к различным формам и способам сбережений. // Вопросы экономики, 1998, в печати
9. Alessie R., Lusardi A. Saving and income smoothing: evidence from panel data. VBS-Center Saving Project, Progress Report 11, Tilburg University, 1993.
10. Artus P., Bleuze E., Legros F., Nicolai J. Epargne des menages, choix de portefeuille et fiscalite en France. // Revue economique, 1991, N 4.
11. Behavior models of saving . NBER reporter. - Cambridge(Mass.), 1994 - Fall. - P. 18-24.

12. Browning, M.; Lusardi, A. Household saving: micro theories and micro facts . J. of econ. lit., 1996. - Vol. 34, N 4. - P. 1797-1855.

13. Callen T., Thimann C. Empirical determinants of household saving: evidence from OECD countries (1997), IMF Working paper

14. Deaton A.S. Understanding Consumption. Oxford: Oxford U. Press, 1992.

15. El-Mokadem A.M. Econometric Models of Personal Saving. The United Kingdom, 1948-1966. London, Butterworths, 1973.

16. Flavin M. The adjustement of consumption to changing expectations about future income. Journal of Political Economy, 1981, 89, p.974-1009.

17. Feldstein M. Personal taxation and portfolio composition: an econometric analysys. // Econometrica, 1976, N 4 (44).

18. Friedman M. A Theory of the Consumption Function. Princeton: Princeton University Press, 1957.

19. Gunnarsson J. The heterogeneity of saving and portfolio behavior: segmentation in financial services markets / Portfolio-based segmentation and consumer behavior, 1999, pp. 26-47.

20. Hall R., Mishkin F. The sensivity of Consumption to Transitory Income: Estimates from Panel Data on Households. Ecjnjmetrica, 1982, 50, p. 461-181.

21. Hayashi F. Understanding Saving: evidence from the United States and Japan. Cambridge, 1997.

22. Hochgurtel, S. (1998) Households' Portfolio Choices. Doctorial thesis. Tilburg University, Tilburg.

23. King, M.A.& Leape, J.I. (1987) Asset Acumulation, Information and the Life Cycle (NBER Working Paper No. 2392) Cambridge. MA: NBER.

24. Kotlikoff L.J. What Determines Savings? Cambridge (Mass.), MIT Press, 1989.

25. Modigliani F. The Life-Cycle Hypothesis of Saving Twenty Years Later / Contemporary Issues in Economics /ed. by M.Parkin and A.R.Nobay, Manchester, Manchester University Press, 1975.

26. Mones, M.A.; Ventura, E. Saving decisions and fiscal incentives: a Spanish panel-based analysis. Appl. economics. - L., 1996. - Vol. 28, N 9. - P.1105-1117.

27. Owen D. Money, Wealth and Expenditure: Integrated Modeling of Consumption and Portfolio Behaviour. Cambridge, Cambridge University Press, 1986.

28.The economics of savings . Ed. by J.H.Gaspinski, Boston, Kluwer, 1993.

Appendix 1. 1998 survey data

Table 1 [2] Number of members of the household (%)

	Moscow		Ivanovo region		N.Novgorod region	
	GKS	Sample	GKS	Sample	GKS	Sample
1	**19,4**	17,3	**23,4**	21,4	**19,4**	14,7
2	**26,5**	28,5	**28,9**	29,5	**27,7**	27,2
3	**26,1**	30,1	**23**	23,5	**24,4**	28,7
4	**19,1**	17,7	**17,1**	19,2	**19,9**	18,5
5 and more	**8,9**	6,4	**7,6**	6,4	**8,6**	11
On average	**2,74**	2,69	**2,59**	2,61	**2,74**	2,88

Table 2. Age (%)

	Moscow		Ivanovo region		N.Novgorod region	
	GKS	Sample	GKS	Sample	GKS	Sample
Up to active. (15 years old)	**20,9**	13,9	**19,7**	15,2	**19,5**	18,2
Active pop.	**57,3**	67,7	**56,3**	64,4	**55,8**	59,8
Older than active	**24,8**	21,4	**24**	20,3	**24,7**	21,9

Table 3. Gender(%)

	Moscow		Ivanovo region		N.Novgorod region	
	GKS	Sample	GKS	Sample	GKS	Sample
Men	45,25	44,7	44,8	44,5	45,0	45,4

Table 4. A number of children in the household (%)

	Moscow		Ivanovo		N.Novgorod	
	GKS	Sample	GKS	Sample	GKS	Sample
There are children up to 18 years, including	**42,3**	37,3	**39,5**	40,6	**39,5**	43,8
1 child	**28,6**	31,7	**23,3**	30,8	**23,3**	29,4
2 children	**12,2**	5,6	**13,9**	9.0	**13,9**	11,7
more than 3 children	**1,5**	0	**2,3**	0,8	**2,3**	2,7
There are no children	**44,3**	62,7	**57,7**	59,4	**60,5**	56,2

Table 5. Educational level (older than 18 years) in a sample (%)

	Moscow	Ivanovo	N.Novgorod

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[2] Tables 1,2,4 – the data from microcensus of citizens 1994 of the State Committee of Statistics (GKS).

Have higher education	38	36	20,9

Appendix 1 1999 survey data

Table 1 [3] Number of members of the household (%)

	Moscow		Ivanovo region		N.Novgorod region		Republic of Komi		Total
	GKS	Sample	GKS	Sample	GKS	Sample	GKS	Sample	Sample
1	**19,4**	17,4	**23,4**	22,2	**19,4**	19,8	**15,4**	18,9	19,6
2	**26,5**	24,3	**28,9**	29,2	**27,7**	28,3	**24**	24,8	26,7
3	**26,1**	24,3	**23**	23,7	**24,4**	25,2	**26,3**	24,0	24,3
4	**19,1**	21,2	**17,1**	16,0	**19,9**	19,0	**24,3**	22,0	19,6
More than 5	**8,9**	12,7	**7,6**	9,0	**8,6**	7,8	**10**	10,3	9,9
On average	**2,74**	2,97	**2,59**	2,62	**2,74**	2,67	**2,93**	2,81	2,77
Number of families		259		257		258		254	1028

Table 2. Age (%)

	Moscow		Ivanovo region		N.Novgorod region		R. of Komi		Total
	GKS	Sample	GKS	Sample	GKS	Sample	GKS	Sample	Sample
Up to active. (15 years old)	**20,9**	17,8	**19,7**	19,3	**19,5**	16,4		19,1	18,2
Active pop.	**57,3**	62,5	**56,3**	57,3	**55,8**	58,9		68,7	62,7
Older than active	**24,8**	19,7	**24**	23,4	**24,7**	24,7		12,2	19,9
Mean age, years		38,1		39,4		40,0		33,7	37,7

Table 3. Gender(%)

	Moscow		Ivanovo region		N.Novgorod region		R. of Komi		Total
	GKS	Sample	GKS	Sample	GKS	Sample	GKS	Sample	Sample
Men	**45,25**	42,3	**44,8**	40,2	**45,0**	45,4	**47,5**	44,2	43,1

Table 4. A number of children in the household (%)

	Moscow		Ivanovo		N.Novgorod		R. of Komi		Total
	GKS	Sample	GKS	Sample	GKS	Sample	GKS	Sample	Sample
There are children up to 18 years, including	**42,3**	43,4	**39,5**	41,6	**39,5**	40,8	**43,6**	45,7	42,6
1 child	**28,6**	30,9	**23,3**	27,6	**23,3**	28,3	**26,9**	30,7	29,4
2 children	**12,2**	10,4	**13,9**	13,6	**13,9**	10,1	**15**	13,4	11,9
more than 3 children	**1,5**	3,1	**2,3**	0,4	**2,3**	0,4	**1,7**	1,6	1,4
There are no children	**57,6**	55,6	**57,7**	58,4	**60,5**	61,2	**56,4**	54,3	57,4

[3] Tables 1,2,4 – the data from microcensus of citizens 1994 of the State Committee of Statistics (GKS).

Table 5. Educational level (older than 18 years) in a sample (%)

	Moscow	Ivanovo	N.Novgorod	Syktyvkar
Have higher education	44,5	32,3	23,4	40,4

Table 6. The ratio of employed among of able-bodied in a sample (%)

	Moscow	Ivanovo	N.Novgorod	Syktyvkar
The ratio of employed	77,7	72,5	82,5	81,1

Appendix 2. The structure of household financial assets (macro statistics)

	Cash rubles	Sberbank ruble deposits	Ruble deposits in commercial banks;	Securities	Ruble equivalent of foreign currency deposits	Ruble equivalent of foreign currency in cash form	Savings, total
Million rubles, in current prices							
12-97	103 300	115 200	33 000	32 695	31 418	136 857	452 469
06-98	101 900	126 900	39 200	39 604	37 709	135 712	481 025
12-98	131 000	126 800	22 700	50 287	60 282	478 236	869 305
06-99	145 200	160 500	24 100	59 285	78 651	487 774	955 510
Million rubles, in December 1997 prices (CPI);							
12-97	103 300	115 200	33 000	32 695	31 418	136 857	452 469
06-98	97 924	121 949	37 671	38 059	36 238	130 417	462 258
12-98	71 041	68 764	12 310	27 271	32 691	259 347	471 424
06-99	63 246	69 911	10 498	25 823	34 259	212 466	416 203
Million rubles, in December 1997 prices (consumer spending deflator)							
12-97	103 300	115 200	33 000	32 695	31 418	136 857	452 469
06-98	95 500	118 930	36 738	37 117	35 341	127 189	450 815
12-98	78 023	75 521	13 520	29 951	35 904	284 835	517 753
06-99	70 239	77 640	11 658	28 678	38 046	235 955	462 217
Billion US dollars, official end-of-month exchange rate							
12-97	17,34	19,34	5,54	5,49	5,27	22,97	75,94
06-98	16,44	20,47	6,32	6,39	6,08	21,90	77,61
12-98	6,34	6,14	1,10	2,44	2,92	23,16	42,10
06-99	6,00	6,63	1,00	2,45	3,25	20,15	39,47
As % of monthly income							
12-97	55,30	61,67	17,67	17,50	16,82	73,26	242,22
06-98	81,13	101,04	31,21	31,53	30,02	108,05	382,98
12-98	57,66	55,81	9,99	22,13	26,53	210,49	382,62
06-99	68,07	75,25	11,30	27,79	36,87	228,68	447,97

Source: Goskomstat, RF Central Bank, BEA estimate.

Appendix 3.

Average values of the variables.

	1998, 1999 surveys	1998 survey	1999 survey
Annual household consumption (log)	10,0706	10,4415	9,7864
Annual household income (log)	10,0850	10,5091	9,7512
Financial assets at the beginning of the period (log)	3,6346	2,7684	4,2547
Living space of the apartments per person	15,0572	15,0350	15,0736
If a summer house is available (yes=1)	,30	,27	,32
If a garden plot is available (yes=1)	,24	,22	,26
If a car is available (yes=1)	,24	,23	,25
The number of members in a family sharing the common budget	2,6383	2,5997	2,6667
The number of children under 16 years	,50	,45	,53
The gender of the bread-winner of a family (male =1)	,59	,61	,58
The age of the bread-winner /10	4,66	4,59	4,71
The age of the bread-winner /10 squared	24,02	23,32	24,54
If the bread-winner has high education (yes=1)	,39	,38	,41
The number of employed in a family	1,32	1,34	1,31
Moscow (yes=1)	,29	,33	,25
N.Novgorod (yes=1)	,30	,36	,25
Syktyvkar (yes=1)	,14	,00	,24
Total annual household consumption, rub. (in 1999 prices)	36621,86	48465,73	26878,44
Total annual household income, rub. (in 1999 prices)	37553,24	52327,14	25923,74
Total sum of financial assets at the beginning of the period, rub.	4596,4801	3582,6273	5322,3065
The average saving rate		7,4%	-3,7%

Appendix 4. Regression estimation - availability of particular type of assets (Probit)

	Dependent variable – decoded at the bottom of the table						
	1	2	3	4	5	6	7
Annual income per capita (log)	.5270***	.3353***	.3552***	.8707***	.0070	.1880*	.8377***
If there were incomes in dollars (yes=1)	1.078***	.4886	.4494	-1.08		.6227*	.4354
Wage and pension arrears							
Before the crisis (yes=1)	.0880	.0946	.0683	.3132	.0464	.1626	.1532
After the crisis (yes=1)	.1504	.2646	.0884	.1687	.1107	.3431	.1940
Had been purchasing real estate during the year (yes=1)	.3048*	.1824	.3859**	.0793	.0094	.1726	2.538***
Had been purchasing real durables during the year (yes=1)	.3316**	.3080*	.3481**	.2875	.0840	.1857	.0046
If there is a summer house or a plot (yes=1)	.1289	.2617*	.0117	.6922**	.2110	.0575	-.219
If there is private appartments (yes=1)	.0364	.244	.0206	.414	.2069	.1544	.2648
The number of members in a family	.0473	.101	.098	.0480	.0220	.056	.1303
Gender of the bread-winner (1= male, 0=female.)	.3813***	.2562	.3560**	.1283	.0297	.0712	.3016
Age of the bread-winner	.0022	.0064	.0204***	.0086	.0048	.0029	.0129
If the bread winner has the higher education (yes=1)	.2714**	.3083*	.0281	.2942	.0459	.1782	.0361
If the bread-winner is employed	.1587	.1581	.1922	2.100**	.2687	.1097	.452
Position of the bread-winner – manager (yes=1)	.1038	.4445*	.0763	.4751	.1169	.4343*	.1340
Position of the bread-winner – specialist (yes=1)	-.276*	.3215	.1027	.3724	.5371***	.2763*	.2355
Position of the bread-winner – entrepreneur or self-employed (yes=1)	.1336	.4629*	.0590	1.076	.7177**	.3336	.8106**
Family status of the bread-winner (1= married)	.2368	.0360	.3337**	.0083	.1297	.0635	.2211
The proportion of under-age members in a family	.0332	.5894	.5486	.8950	.2999	.6142	1.411*
The proportion of employed in a family	.0715	.0164	.3457	-.935	.1062	.6461	.6455
Moscow (yes=1)	.1394	.512**	.1650	.3415	.3243	.6600***	1.077***
N.Novgorod (yes=1)	.446***	.472**	.0709	.2963	.2142	.1809	.5259
Syktyvkar (yes=1)	.2301	.012	.3604**	.4335	.7954***	.4389**	.5651
The forecast of							
Exchange rate in August 1999	.0068	.0015	.0035	.0042	-.011	-.004	.0136
CPI in August 1999	.0080	.0407	.0145	.0706**	.0090	.0131	.0327
It is considered to be risky to invest in:							
Sberbank (yes=1)	.144	.2722	.2418*	.1206	.0892	.0870	.0765
Com. bank (yes=1)	.0857	-.369**	.2280	.3986	.0008	.0665	.3878
Cash (yes=1)	.0703	-.001	.0301	.3978	.2628	.0984	.2264
Durables, gold (yes=1)	.1703	.2178	.0756	.6897	.5140*	.1673	
Lend money (yes=1)	.0842	.1626	.1726	.1255	.0666	-.095	.0688
Real estate (yes=1)	.0126	.0430	.1084	.8156	.0168	-.519*	.7490
It is considered to be low profitable to invest in:							
Sberbank, ruble deposits (yes=1)	.0539	.1473	.1020	.0022	.1543	.0971	.4601
Sberbank, dollar deposits (yes=1)	.1488	.1329	.0919	.3895	.0394	.2772*	.3359
Com. Bank, ruble deposits (yes=1)	-.036	-.1590	.1045	.2553	.0559	.2951	.1283
Com. Bank, dollar deposits (yes=1)	.1173	.0991	.3337	.0879	-.019	.3392	.2222
Cash rubles (yes=1)	.0593	.0670	.0537	.334	.0953	.0142	.344
Cash dollars (yes=1)	.0394	.1926	.2091	.1104	.0002	.4817**	.3094
Durables, gold (yes=1)	.0996	.0812	.0889	.4035	.0137	.0505	.5559
Lend money (yes=1)	.0639	.0551	.2739*	.1881	.1148	.1464	.2548
Real estate (yes=1)	.0705	.0193	.1275	.872*	.3694	-.001	.3480
It is difficult to estimate risk and profitability	.0196	.0421**	.0308**	.0084	-.019	.0324**	.0489
There were deposits losses in Sberbank in the year 1991 (yes=1)	.0716	.0427	.4628***	.1235	.2037	.0249	.0592.
There were deposits losses in the years 1993-98 (yes=1)	.0937	.4007**	.3722**	.6462***	.4600***	.032	1026
Had been lending money during the year (yes=1)	.2642**	.4409***	.2092*	.5537**	.063		
Had been borrowing money during the year (yes=1)	.3844***	.1435	-.230*	.0846	.2427		
There is an interest to the financial information (yes=1)	.1870	.1564	.4273	.722*	.5334	.3319	1.43***
Constant	5.935***	-4.717***	4.962***	12.61***	1.612	2.849**	12.40**
Number of obs	789	789	789	789	767	790	714
Chi2	137.94	182.51	190.29	108.37	106.77	79.79	111.66
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006	0.0000
Pseudo R2	0.1614	0.2985	0.2179	0.3954	0.1884	0.1156	0.3997

Dependent variable
1. **There are cash ruble assets (yes=1)**
2. **There are cash dollar assets (yes=1)**
3. **There are ruble deposits in Sberbank (yes=1)**
4. **There are deposits in comm. Banks (rub, dol.) or dollar deposits in Sberbank (yes=1)**

5. **There are shares in financial companies or pension funds, other securities (дуes=1)**
6. **There are rubles lent (yes=1)**
7. **There are dollars lent (yes=1)**