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Indicators of Poverty in Transitional Russia

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Program Area: Micro 2 (Household Behavior)

CONTENTS

	Non-technical Summary	4
1	Introduction	6
2.	Definition of poverty in Russia	8
3.	Assessment of poverty in Russia	11
	3.1. Per capita monetary income as a poverty criterion	11
	3.2. Per capita income as a poverty level criterion	21
	3.3. Regional differences in the level of poverty	29
4.	A multi-dimensional poverty measure	36
5	Poverty measurement and targeted social assistance	44
	Appendixes	49

NON-TECHNICAL SUMMARY

The spread of poverty has become a burning issue in the Russian transition to the market. A significant portion of the Russian population is considered to be living below the poverty line; the question is how significant a portion? The answer depends on how the poverty line is determined. The political implications of the official statistics relating to public welfare have turned the definition and measurement of poverty into a controversial political issue. The problem of inconsistent or conflicting measures of poverty has not been solved by academic researchers; despite an outpouring of recent literature devoted to questions of poverty, there is no consensus on fundamental principles. Suggestions for definition of the poverty line range from the physiological subsistence minimum to rather comfortable conditions (by the standards of developing countries) enjoyed in developed countries with extensive social services.

The official methodology used by the State Statistics Agency to calculate the poverty line is also far from satisfactory. It is based on the subsistence minimum criterion which, in turn, is defined with respect to *per capita* cash income. First, this fails to take into account other (non-monetary) forms of income, such as subsistence farming. Second, it ignores the significant economies of scale in household consumption (joint consumption of dwelling, durables, etc.).

In the paper, Lilia Ovcharova *et al*. attempt to reexamine the official measures of poverty by applying a standard international methodology to the determination of poverty. In particular, they substitute an index of *per capita household consumer expenses* for the officially used indicator of *per capita* cash income. This allowed them to evaluate not only the cash expenses of households, but also the cash equivalent of the food consumption provided by subsistence farming. To account for the economies of scale effect (larger families tend to spend less per member of household), the authors recalculated *per capita* consumer expenses, using an equivalence scale , which they estimated using consumption data from 616 households in the Volgograd region.

The results appear quite striking. Poverty in Russia does not appear to be as widespread as was thought. Only 24 28% of the population, rather than the official estimate of 34 44%, fell below the subsistence level. Only 10% of urban households could not afford a minimum food basket, an indication of extreme poverty. What drives this result is the fact that home-produced foods account for nearly 40% of overall food consumption! In rural areas, the figure is

significantly higher, reaching nearly 75% of total food consumption. Contrary to the popular view, it appears that rural and urban households have virtually identical probabilities of living at the subsistence level and higher. On average in 1998, in both the city and the country, only approximately 25% of the population lived below the poverty line.

Rescaling of *per capita* income according to the size of a household also leads to a reduction in the estimated poverty. Nonetheless, one should be cautious in interpreting these results. Large families do spend less on average; however at least to some extent these savings may be attributed to a drop in the *quality* of consumption, as is often the case with large and poor families.

In addition, the paper discusses a more general approach to poverty measurement. Household income and expenditures are not always reliable measures of poverty. One should consider other important household characteristics, such as private belongings and property holdings. To account for these, the authors propose a more comprehensive methodology of poverty measurement which, in addition to monetary income, looks at a measure of household property. The results of this study can be used to inform regional governments on ways to improve the efficiency of welfare spending. This may be particularly important today, when budget cuts, on the one hand, and the deepening economic crisis, on the other, make the issue of *targeted* social policy all the more urgent.

1. INTRODUCTION

For a long period, the problem of poverty was not discussed openly in publications in the former Soviet Union. It was supposed that the existing social support system, combined with the total employment of the working-aged population, satisfied sufficiently the needs of those unable to work. The problem of poverty and the development of a concept for the definition and assessment of poverty was not properly reflected in the works of Russian economists.

Such terms as "the minimum standard of living" and "the poverty line" began to be used for the first time openly in publications at the beginning of the 1990s. This, however, does not mean that poverty did not exist in the Soviet Union. In 1975, for the first time, an allowance for children was introduced for low-income families in the USSR. A family was considered to be a low-income one if its income per capita was below 50 roubles. By 1985, the poverty threshold was increased to 75 roubles and was used as the criterion for determining minimum wages and the minimum pension.

Starting in the 1960s, the rational and the minimum consumer budgets for different groups of the population were developed by a normative method in papers not intended for publication. That normative method was based on the integration of the concepts of absolute and relative poverty. M. Mozhina in her papers[1] commented that those minimum consumer budgets were in fact not minimums. The minimum and the rational consumer baskets included mostly identical non-food goods and services (300 items) and food products. However, for the calculation of the minimum consumer basket, the fixed state prices were used, while the calculation of the rational consumer basket was based on average purchase prices. That was the basic difference between the minimum and the rational consumer basket. Therefore, the composition and the structure of the products and services included in the minimum budget were oriented towards the average consumer standard. This method for determining the low-income threshold was used in 1975 and 1985. In this case, the minimum standard of living amounted to half the average per capita income. The share of food expenditures in this basket amounted to 50%.

According to the assessment by V.G.Zinin,[2] in 1975 (when the poverty line was 50 roubles) the share of families having an income below the poverty line was

[1] Collected articles edited by M.Mozhina "Poverty:View of Scientists on Problem",Moscow, 1994, p. 267.
[2] Monitoring of socio-economic potentials of families in the III quarter of 1996. Ministry of Labour and Social Development of the RF, Goskomstat, Moscow, 1996, p. 221.

16% among workers' and employees' families, while it was 39% among collective farmers. In 1985 (below a poverty threshold of 75 roubles per capita) it was 16.3% and 27.6% respectively. In 1989, before the reforms started, the share of the poor, according to various assessment methods, amounted to 16-25% of the total population.

In 1992, a book edited by N.M.Rimashevskaya was published in which, for the first time, the socio-demographic characterisation of poor families in Russia was presented and the tendency for its structural change was analysed using the data of a survey conducted in Taganrog (a typical average-sized Russian city) in 1978 and 1989. In particular, the authors in 1989 were already observing some negative structural shifts in the composition of poor families: among them, the share of traditionally poor categories of the population (pensioners, single-parent and multiple-children families) decreased, and the share of socially-comfortable families increased. The liberalisation of prices in January 1992 resulted in a more than two-fold decrease in the real incomes of all social groups of the population. A need for modifying the level and the structure of the minimum standard of living became obvious. In January 1992, the Ministry of Labour of the Russian Federation approved the new minimum standard.

Starting in 1992, the problems related to the incidence and the depth of poverty in Russia have been widely discussed in the Russian community. Numerous politicians and researchers who became aware of the social significance of the problem began to manipulate different methods of assessing the poverty level in Russia, to put forward mutually exclusive assessments of the poverty scale, and to criticise each other for the use of unreliable data. Each of the researchers solved in their own way the problem of the definition of the poor. At the same time, a wide spectrum of definitions of poverty exist and, without agreeing on a single approach to the assessment of poverty, it is impossible to compare different evaluations.

The aim of the present work is an attempt to reassess the official data on the incidence of poverty in Russia based on the study of worldwide experience in the definition and assessment of poverty, and an analysis of the methodological approaches used by Russian state institutions for the assessment of the poverty level. Instead of the criterion of income per capita, the authors suggest comparing the value of the minimum standard of living to the parameter of household per capita expenditure, including not only monetary expenditures but also the monetary valuation of the food products consumed that were obtained from the private *podsobnoe khosiaistvo* .

In view of the fact that the income and expenditure of the family cannot always be a reliable instrument for assessing poverty, the present report offers a wider concept of poverty, taking into account the presence of such significant

components of the economic potential of a household such as the dwelling and the property owned. On the basis of this approach, the present paper discusses the multiple assessment of poverty and the factor method of assessing whether a family is in need of additional social support.

2. DEFINITION OF POVERTY IN RUSSIA

The problem of poverty is known in some form in every society. It is universal and is an object of close attention. At the same time, no unambiguous, generally-accepted definition of poverty exists, or can exist. The notion of poverty by its very nature is debatable and is continually modified and re-stated.

The first serious attempts to study and evaluate poverty were made in Great Britain at the end of the XIXth century by Ch. Booth [3] and S. Rowntree.[4] Their works provided an origin for the extensive investigations in this area. In the last two decades, an extensive literature on the subject of poverty has evolved. The very notion of "poverty" still remains a subject of discussion. Opinions differ widely from defining poverty at the physiological minimum level to the historically-developed living standard of the majority of the population.

Numerous surveys carried out in various countries, differing in their methodology and scope, can hardly be compared or generalised. Due to the vaguely-defined criteria and the low reliability of statistical data, the scope of poverty is hard to determine, even within the limits of a particular country, and its appraisal fluctuates from one survey to another.

By and large, fighting poverty has two main goals: (a) to find additional resources for helping the poor; and (b) to create opportunities for the poor to find their own solutions to their problems. Therefore, the central problem is the definition of the minimum income level required by an individual to satisfy his/her daily needs.

In world practice, three basic approaches to the definition and assessment of poverty are clearly observed: the objective, relative and subjective approaches.

The absolute poverty concept is based on determining the minimum subsistence level. The minimum subsistence level is usually stable and does not depend on time. The minimum nutritional needs of people are practically similar in different countries and depend little on climatic conditions. The critics of the absolute poverty concept usually point to the impossibility of determining

[3] Booth, Ch. The Life and Labour of the People. L., 1889.
[4] Rowntree, S. Poverty: A Study of Town Life. L., 1901.

a universal minimum subsistence standard, since different people have different life styles.[5]

According to the concept of relative poverty, the individuals whose income does not permit them to maintain the level of consumption that is prevalent in the particular society are considered to be poor. Since every society is differentiated by wealth, this concept implies that poverty will always exist.

The subjective poverty concept is based on the subjective self-assessment of their situation by individuals. The critics of this relatively new concept suggest that it is impossible to compare wealth levels and subjective data.

Each of these concepts, taken by itself, has serious limitations that prevent its use as a starting point in the evaluation of poverty. Therefore, statistical practice usually combines the elements of several concepts.

The approach of the Russian government to the problem of poverty is based on the absolute poverty concept, using certain elements of the relative approach. The calculations of the cost of the minimum standard of living are based on the Methodological Recommendations for Calculating the Minimum Standard of Living in the Regions of the Russian Federation.[6]

In Russia, the minimum standard of living is calculated on the basis of a normative statistical method, i.e. the minimum consumer basket includes a list of food products providing the required amount of calories accounting for dietary requirements plus expenditures on commodities, services, taxes and the obligatory payments that comprise a certain per cent of the food basket and correspond in their expenditure structure to the low income family budget.

The cost of the minimum standard of living is the sum of the cost of the food basket, plus the corresponding cost of commodities and services, plus the amount of taxes:

$$\mathbf{C(min)i} = \mathbf{Cfi} + \mathbf{Cgi} + \mathbf{Csi} + \mathbf{Cti}$$

Cfi is the cost of the food basket of the i-th gender/age group of the population.

Cgi is the cost of consumption of non-food products by the i-th gender/ age population group.

Csi is the cost of payable services used by the i-th gender/age population group.

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[5] Townsend P. Poverty in the United Kingdom. A Survey of Household Resources and Standards of Living. N.Y. 1979.

[6] Developed in compliance with the Decree of the President of the Russian Federation No. 210 of March 2, 1992 "On the minimum consumer budget system".

Cti is the cost of the tax expenditure of the i-th gender/age population group.

$$Cgi,si,ti = Cfi * (Kgi,si,ti : Kfi)$$

Kgi,si,ti - indices of the minimum basket of the i-th gender/age group of the population.

i means from 1 to 5:

i=1 for adults of working age;
i=2 for pensioners;
i=3 for children aged 0-6;
i=4 for children aged 7-15;
i=5 for all gender/age groups of the population on average.

The share of expenditure on food in the minimum standard of living of a working individual is 61.6% (see Table 1), in that of a pensioner it is 82.9%, while the average share of food expenditure per capita is 68.3%. Since 1992, the composition and the structure of the officially-accepted minimum standard have not been modified, ignoring the fact that the low share of non-food commodities in the structure of the minimum living standard implies that the population satisfies those needs mainly at the expense of certain reserves owned by the families. Later, the minimum standard of living was supposed to be revised in order to increase the share of expenditures on non-food goods and services.

Table 1. Minimum consumer basket structure (%)

	Total expenditure	Food	Non-food goods	Services	Taxes and payments
Total population	100	68.3	19.1	7.4	5.2
Working-age adults	100	61.6	21.4	8.9	8.1
Pensioners	100	82.9	10.0	7.1	-
Children: aged 0-6	100	74.5	18.9	6.6	-
aged 7-15	100	73.4	19.8	6.8	-

3. ASSESSMENT OF POVERTY IN RUSSIA

3.1. Per capita monetary income as a poverty criterion

Data sources on the level of poverty. The main statistical indicator characterising the extent of poverty at the macroeconomic level is the share of the population having monetary incomes below the minimum standard of living. The experts differ in their opinions in respect to the scope of the incidence of poverty in post-Soviet Russia. In this context, three main sources of information on the poverty level in Russia can be distinguished.

1. The state statistical data. The main information source on the standard of living of the population out of the state statistical institutions is the survey of family budgets conducted by the Goskomstat of the Russian Federation (RF) [Goskomstat] across all subjects of the Russian Federation, embracing 48,600 households. The sampling of the households is organised using the principle of representing the "entire population" in a particular region of the Russian Federation.

2. The Russian Longitudinal Monitoring Survey (RLMS) of the standard of living in Russia. This survey has been going on since 1992 with the financial support of the World Bank. Seven rounds of the survey have taken place, the latest in October 1996. The RLMS is based on the representative sampling of 6,500 households representing the population of the Russian Federation as a whole. In 1994, the authors of this survey significantly changed the sampling, which has to be taken into account in the analysis of the dynamics of the poverty level.

3. Single surveys specifically organised. They include, for example, a survey of 8,000 households conducted by the Institute for Socio-economic Studies of the Population (ISESP) of the Russian Academy of Sciences (RAN), which was commissioned by the Central Bank of the RF in October 1996, and in which the authors of the present report participated. The survey was conducted for the purpose of studying the savings behaviour of the population. The main source for an increment in savings is the current monetary income of the population; therefore, the survey programme was based on questions relating to the standard of living of the population. The household was selected as the unit of observation in this investigation, with the sampling designed as a random, stratified, multi-stage one. The strategy of selecting the observation units was implemented in a four-stage procedure: selection of Federation subjects; selection of populated areas; selection of polling areas; selection of households. At the first stage, 13 regions representing Russia as a whole were selected using a cluster analysis of the main parameters of the standard of

living. As a result, a data set with a minimum deviation of sampling assessments from the average Russian level (Annex 2) was obtained.

According to the calculations presented in Table 2, the researchers estimate differently not only the scope of the incidence of poverty but also its dynamic changes. Thus, Goskomstat official data (Table 2) reports that, during the years of the reforms, the share of the poor decreased from 33% to 22% while, according to the RLMS data, on the contrary it grew from 11.3% to 36.3%.

In principle, such differences in the assessment of the poverty level are caused by the methodological peculiarities of assessing per capita monetary income.

Table 2. Share of the population having per capita monetary incomes below the poverty line

Sources	1992	1993	1994	1995	1996
Goskomstat data with reassessment [7]	-	-	22.4	24.7	22.0
Goskomstat data without reassessment [8]	33.5	31.5	42.0	-	34.5 January-September
RLMS data[9]	11.1 September	13.1 November	17.2 December	29.5 October	36.3 October
ISESP data with reassessment	-	-	-	-	38.6 October
ISESP data without reassessment	-	-	-	-	44.4 October

It ought to be noted that, since 1993, the income distribution series obtained by the sampling of the budget has been reassessed by approximately 20% on

[7] Calculated by: Living Standard of Russian Population. Goskomstat of Russia. Statistical data. Moscow , 1996, p.p. 86-87.

[8] Calculated by: 1. Monitoring of socio-economic potential of families. Ministry of Social Security of Population and Goskomstat of Russian Federation, (the 2nd stage - 1995). Moscow, 1996, p. 342.
2. Monitoring of socio-economic potential of families. Ministry of Social Security and Goskomstat of Russian Federation. The 3d quarter of 1996 . Moscow, 1996 , p. 64.

[9] Calculated by: T. Mroz, B.Popkin, D.Mancini, E. Glinskaya, M.Lokshin. Monitoring Economic Conditions in the Russian Federation: The Russia Longitudinal Monitoring Survey 1992-96 . Agency for International

the basis of data on retail turnover, including services, taking into account the expert evaluations of non-organised trade volume, as well as other expenditures of the population and the increase in cash and savings.[10]

This method of the reassessment of the income distribution series used by Goskomstat is criticised by the majority of Russian researchers.

Hereafter for the present project, we use the budget statistical data without reassessment.[11]

The adjustment of the share of the population having incomes below the poverty line, according to the ISESP data, was performed by the elimination from the number of the poor of two categories of respondents that did not have any monetary income at the moment of the survey and used for their current consumption their previous savings, the total amount of which exceeded 10 million roubles. The first category included the households that leased out their apartments and other property and had received their rent previously. The second category included the families of entrepreneurs and independent professionals who, due to the specific terms of their business, did not receive any income in the course of the month considered. Such categories of households are virtually absent in the RLMS samplings and the budget statistics.

If the RLMS data are compared to the budget survey data without taking into account the reassessment of the distribution series by income, these two surveys revealed in 1996 an equal degree of the incidence of poverty. The assessment of the share of the population with incomes below the minimum standard of living, calculated and reappraised on the basis of the ISESP data, is also close to the former one. Therefore, if we classify as poor those who have per capita monetary income below the minimum standard of living, it follows that 34-38% of the population of Russia in 1996 were poor.

Indicators of the depth and acuteness of poverty**.** The poverty level indicator, defined as the share of the population with income below the minimum standard of living, provides no information on the depth of poverty. Therefore, the utilisation of this indicator for an assessment of the dynamics of the poverty

Development Carolina Population Center, University of North Carolina at Chapen Hill, North Carolina, February 1997, p. 13.

[10] G.N.Volkova, L.A.Migranova, N.M.Rimashevskaya. Methods for evaluation of the income differentiation of the population. Voprosy Statistiki, No.2. 1997, p.30.

[11] Most of the data used in the present project have not been published previously and were calculated by the employees of Goskomstat at the request of the project participants. The present version of the report uses direct calculations based on the budget surveys database. Some indicators will possibly be reassessed in future taking into account additional data sources.

level or the efficiency of the state measures adopted for the alleviation of poverty can entail serious errors. For example, in cases when the incomes of the poor begin approaching the poverty line, but without crossing it, the share of the poor remains unchanged, despite the considerable resources spent on fighting poverty. The most complete characteristics of the extent of poverty can be obtained by using 3 values of the Foster - Greer - Thorbecke index, when Q = 0,1 or 2.

$$\mathbf{FGT} = \mathbf{1/N} \ \Sigma_{\mathbf{n}} \ [\ (\mathbf{Z}-\mathbf{Y_i})/\mathbf{Z}\ ]^{\mathbf{Q}}$$

where:

Y - per capita income,
Z - minimum standard of living (poverty line),
N - size of the general sample,
n - number of poor people,
Q - variable index.

Where Q=0, the FGT index represents an assessment of the share of the population with incomes below the minimum standard of living. Where Q=1, this index gives an evaluation (as a percentage of the minimum standard the poverty line) of the poverty gap (the amount of income required for the elimination of poverty), calculated per unit of the general population (a citizen of a country, an inhabitant of a city, or a representative of a certain category of the population). Where Q=2, the index shows the depth of poverty. In this case, by the calculation of the index for a poor individual, the value of the individual poverty gap is weighted by the same value, which results in the increased significance of the larger figures for the poverty gap. Therefore this index can be regarded as a characteristic of the depth of poverty. If we compare two samples with equal values for Q=1, the poverty will be more severe in the sample with the greater value in the FGT index for Q=2.

Appendix 1 presents calculations for the FGT index on the basis of the quarterly budget statistics for 1996. An analysis of these data shows that the reduction in the share of the poor in 1996 was mainly due to the rise in the incomes of the better-off categories among the poor. In particular, in the first quarter of 1996, 17.7% of single pensioners had incomes below the minimum standard of living, and the average poverty gap per single pensioner comprised 5-9% of the minimum living standard. In the fourth quarter of 1996, the share of single pensioners decreased by a factor of more than 2 and amounted to 7.3%; in contrast, the average per capita poverty gap grew to 8.5% of the minimum standard of living.

Consequently, if we evaluate poverty dynamics by the share of the poor, in 1996 poverty among pensioners decreased by the end of the year as

compared to the beginning of the year. But in terms of changes in the average poverty gap, poverty among pensioners grew. In the case of using the FGT index at Q=2, the extent of poverty becomes even more significant.

The dynamics of the extent of poverty in 1996 among the largest group of the population, i.e. households with children under 16, analysed on the basis of three FGT index values, reveals the following. The share of the poor (FGT index value for Q=0) had its maximum value (53.8%) in Quarter I of 1996. In the course of the year, this steadily reduced and, at the end of the year, had dropped to 33.7%. The highest rates of decline were observed in Quarter IV. The poverty gap (FGT index value for Q=1) reached its maximum value in Quarter III, while the share of poor households with children under 16 decreased since the beginning of the year by 8.6%. Some obviously positive changes were registered in Quarter IV: all FGT index values decreased when compared to the third quarter. This testifies to a reduction in poverty in all relevant respects.

The economic reforms taking place in Russia are accompanied by a negative phenomenon, namely the arrears of salaries, pensions and other social payments. The irregular receipt of income by certain members of a household has a significant effect on the size of the monthly per capita income of the population. Therefore, the indicators of the acuteness and duration of poverty merit special attention. If we consider as poor only the individuals that had income below the minimum standard of living for three consecutive months, the data obtained on the incidence of poverty will be significantly different from the monthly indicators of the poverty level.

Thus, according to the budget statistical data from Goskomstat (Appendix 2), in the course of 1996 the share of households having monetary income below the minimum standard of living for three successive months is lower by a factor of 1.5-2 than the average monthly value of this parameter: 34.5% of the households surveyed had average monthly incomes in 1996 below the minimum standard of living, but only 20.1% had such incomes for three consecutive months.

It should be noted that, in the assessment of the poverty level by comparing current monetary incomes to the minimum standard of living, an enhanced concentration of poor families was observed in rural districts: according to the data presented in Appendix 2, 26.4% of urban families and 59.2% of rural families surveyed in 1996 had an average per capita income below the minimum standard of living. Accordingly, 14% of urban families and 39% of rural families were receiving such incomes over three consecutive months.

Average per capita and equivalent income. In comparing the living standards of different households, we cannot ignore the issues related to a comparison of the incomes obtained by families of different composition. At present, most

analysts take this into consideration and use one or another equivalence scale. However, in Russian statistical practice, the following method of comparing the incomes of different families is used: summary family income is divided by the number of family members, and the family with the higher per capita income is considered to be the wealthier. This approach is obviously inconsistent with the actual phenomenon of the reduction in family expenditure resulting from the economies gained due to family size. The objective economic basis for these economies is the effect of sharing a dwelling and the joint consumption of durable goods, such as refrigerators, TV sets, furniture, telephone, etc. For example, the international institutions the OECD and Luxemburg Income Study (LIS) use the following equivalence scales for the conversion of summary family income into equivalent income:

Type of family	Equivalence scales	
	OECD	LIS
Singles	1.0	1.0
1 adult + 1 child	1.5	1.5
1 adult + 2 children	2.0	2.0
2 adults	1.7	1.5
2 adults + 1 child	2.2	2.0
2 adults + 2 children	2.7	2.5
2 adults + 3 children	3.2	3.0

In practice, the construction of equivalence scales is usually based on an analysis of consumer behaviour. Especially important for present-day Russia are equivalence scales which take into account the possible economies on food rather than those on other family expenditures, since the share of food constitutes 68% of the minimum standard of living in Russia and the non-food part is so small that it does not allow for the acquisition of durable goods. In this case, the source of economies is usually the substitution of relatively expensive processed food products by cheap food items subjected to minimal preliminary processing. Another source of economies consists in the purchase of foodstuffs, especially perishable goods, in large quantities which is less expensive.

At the same time, one should bear in mind that, after the minimum living standard was developed, the prices of non-food commodities and services have risen sharply, and poor families have to reduce their expenditures on food in order to meet rent and utilities costs, buy medicines and pay for transport and other vital needs. As a result of these forced economies, about 5-10% of

the Russian population have inadequate nutrition both as regards the necessary quantity of proteins, fats, carbohydrates, minerals and vitamins, as well as the calorific value of the food consumed.

The probability of being a poor family is significantly higher among families with children than among all households on average. Therefore, the employment of equivalence scales should not allow discrimination against large families in view of their right to a minimum standard of consumption for each family member.

According to our project schedule, we used the database of the Volgograd Oblast and tried to apply this approach for constructing equivalence scales on the basis of a consumer demand model in which, using multiple regression, we established the dependence of the share of food expenses (the dependant variable) on family income and family size:

$$\ln Y = a + b \ln X + c N,$$

where:
Y - per capita food expenditure;
X - per capita income;
N - vector of dichotomous variables reflecting the effect of family size.

As a result, the following model was constructed:

$$\ln Y = 10.1 + 0.2 \mathrm{Ln} X - 0.17 N2 - 0.33 N3 - 0.35 N4 - 0.34 N5$$

N2 = 1 for 2-person families;
N3 = 1 for 3-person families;
N4 = 1 for 4-person families;
N5 = 1 for 5-person and larger families.

The parameter values and statistical criteria values for this model are presented in Appendix 4. In this case, all coefficients for variables N2-N4 have a minus sign in the equation. This means that, under a fixed per capita income, per capita food expenditure in large families decreases, which is confirmed by the economies arising from large family size. The respective equivalence scale coefficients for families with different compositions, obtained on the basis of the regression model, are given in Table 3.

The coefficients obtained reveal a significant economy in large families. This method is widely practised despite some limitations (among the disputable issues are: firstly, the hypothesis that families with equal shares of food expenditure have equal incomes; secondly, there are many utility functions showing the same dynamics). However, similar calculations substantiating the economies on food in large families were carried out by the

RLMS authors.[12] The coefficients obtained for the equivalence scales are close to our calculations (Table 3).

Table 3. Coefficients for converting total family income to equivalent income

Coefficients	Family size				
	1	2	3	4	5 or more
Obtained by our research group	1	1.69	2.16	2.81	3.6
Obtained by RLMS researchers	1	1.78	2.42	2.99	3.53

Table 4. Assessment of the share of poor families based on equivalent incomes

	% of all Households	Including families of different sizes (% of all families of the given group)				
		1 member	2 member	3 member	4 member	5 & more member
All households	100	12.0	24.2	28.6	27.6	7.6
Poor families determined by per capita income	30.2	4.3	13.4	22.6	43.0	16.5
Poor families determined by equivalence income	15.9	8.1	17.3	22.4	34.7	17.5

On the whole, the problems of constructing new equivalence scales or substantiating the existing ones are very complicated and could be the subject of a specific project. In particular, the problem of avoiding discrimination against families for which their actual economy on nutrition has become a

[12] B.Popkin, A.Baturin, M.Mozhina, T.Mroz. The minimum living standard in Russia: development of regional variations and other methodological issues. Report on the results of the RLMS in 1994-1995.

threat to normal life activity remains unresolved. In order to resolve this problem, we need databases containing the qualitative characteristics of the foodstuffs consumed. Therefore, in this research we confine ourselves to the results obtained, and convert the total monetary incomes of the families into equivalent incomes using the relevant coefficients. As a result, the share of families with incomes below the minimum standard of living decreased from 30.2% to 15.9% (Table 4). In the case of calculating per capita income by dividing family income by the number of family members (the Goskomstat methodology), 66% of families with 5 or more members are classified as poor, whereas in the case of applying equivalence coefficients, poor families constitute only 36% of the sub-total. The application of scale coefficients also reduces significantly the percentage of the most numerous family categories among poor families (i.e. the families consisting of 3 or 4 members). Among families with 3 or 4 members, which constitute 56% of the families observed, 35.3% are recognised as poor according to the Goskomstat methods, although a calculation based on our equivalence coefficients gives a level of 16.1%.

Taking into account the significant economy effect observed in large families revealed by the budget survey carried out by Goskomstat in the Volgograd Oblast, we tried to apply the method of converting per capita income into equivalent income to the entire database of budget statistics.[13] The respective calculations are presented in Table 5.[14] Similar to the case of Volgograd Oblast, the application of equivalence scales to assessing the standard of living resulted in a significant decrease in the extent of poverty:

[13] The specialists of the Living Standard Statistics Division of Goskomstat were commissioned with the direct support of the Russian Programme of Economic Studies to conduct a calculation of equivalent family incomes according to the coefficients obtained on the basis of the Volgograd database.

[14] Goskomstat has published several population distribution series by income: those including a reassessment of budget statistical data and those without it; budget statistical data for families participating in the survey throughout the whole year and for all families surveyed; a series re-weighted by the structure of the urban and rural populations and a similar series unweighted. In this case, we present an income distribution series constructed on the basis of the budget data (without reassessment) for families surveyed throughout the whole year, re-weighted by the structure of the urban and rural population and taking into account the effect of families who withdrew part-way through the survey. This distribution series gives us an assessment of the share of the poor at 34.5%. Note that, for this distribution series, a slightly different amount ought to be taken as the minimum living standard (325 thousand roubles instead of 369 thousand). This is due to the fact that the socio-demographic structure of the sample differs slightly from the average sample in Russia: the given sample includes more children (28.0% against 23.3%) and fewer individuals of working age (54.3 against 59.0).

from 34.5% to 21.8%. Among urban households, the share of poor families dropped from 26.4% to 14.2%, and for rural households, the share of the poor dropped from 59.2% to 42.1%.

Table 5. Russian population distribution by income levels (budget statistics data for 1996, average per month)

Income intervals (000 roubles)	All population		Urban population		Rural population	
	Per capita income	Equivalent income	Per capita income [15]	Equivalent income	Per capita income [16]	Equivalent income
Below 100	5.5	2.6	2.4	0.9	13.7	7.2
100.1 - 150	5.7	2.7	2.5	0.9	14.2	7.6
150.1 - 200	6.8	4.5	5.7	2.1	15.3	13.4
200.1 - 250	7.2	4.7	6.1	2.3	14.9	13.0
250.1 - 300	7.3	4.9	6.2	3.3	13.0	11.4
300.1 - 350	6.7	6.4	7.1	5.0	7.7	11.3
350.1 - 400	6.1	5.8	6.8	5.7	7.3	10.7
400.1 - 600	18.8	22.8	21.8	26.6	5.5	10.1
600.1 - 800	12.4	15.6	14.7	17.7	3.6	6.6
800.1 - 1000	7.4	10.2	7.6	11.8	1.5	2.7
1000.1 - 2000	12.0	13.4	14.1	17.4	2.4	4.4
Over 2000	4.1	6.4	4.9	6.3	0.9	1.6
Total	100	100	100	100	100	100

It should be noted that many rural households (especially those with per capita income below 150 thousand roubles), after conversion to equivalent incomes,

[15] The share of the poor in the urban population, determined on the basis of the distribution series given here, is equal to 26.4%. For this series, the value of the minimum standard of living applied (335 thousand roubles) also differs from the average standard for Russia because of the structural shifts in socio-demographic composition.

[16] The share of the poor in the rural population, determined on the basis of the distribution series presented here, is found to be 59.2%. The socio-demographic composition of rural households differs even more from the average Russian structure owing to its greater share of pensioners and children; therefore the real standard of living for the rural area amounted to 260 thousand roubles.

still retained their status as poor households, since their income level was too low and even the large family saving effect did not permit them to cross the poverty line. Among urban households, the share of poor families after conversion of per capita income to equivalent incomes decreased from 26.4% to 14.2%.

As can be seen from the results obtained, the effect of the decrease in poverty through the application of equivalent income is so significant that it merits close attention and detailed study for the purpose of being introduced to the Russian approach to assessing the scope of the incidence of poverty. However, as has already been noted, the use of the savings due to large family size coefficients should not result in discrimination against large households. If the effect of the reduction is due less to the specifics of housekeeping in a large family (buying food in larger quantities at lower prices, prevalence of food products requiring long processing, etc.), and more to a real decrease in food consumption and an unbalanced diet, the use of equivalence scales becomes problematic.

3.2. Per capita income as a poverty level criterion

In the course of the drastic market reforms in Russia, such phenomena as employment in a *podsobnoe khosiaistvo* and receiving income from employment in the "shadow economy" has become widespread. Therefore, a correlation between the minimum standard of living and the value of current declared monetary income is not absolutely correct, since this monetary income does not include all goods and services actually consumed by the household.

In this situation, the most objective parameters of the poverty level can be obtained from an analysis of the actual consumption and the actual expenditures of the population.

The most complete information on the expenditures of Russian households is contained in the budget statistical data of Goskomstat.

At the same time, the expenditure structure of even the first decile group differs significantly from living standard norms . In particular, only 50.7% of household expenditure in the first decile group went on food (while the norm is 68.3%). Moreover, the actual monetary expenditure on food by this group of the population was equal to only 24.8% (see Table 6) of the cost of the minimum food basket. For the poorest 10% of rural residents, their food expenditure in 1996 was equal to only 15% of the minimum food basket.

The situation in which poor households economise mostly on their food requires an additional explanation, since the need for food products is the least elastic of all human needs. The researchers in the present project made it their

purpose to explain why the poorest households spend so little on food purchases, while the share of food in their actual expenditure structure is below the sum provided for a minimum standard of living.

Table 6. Monetary food expenditures (January-December 1996)

	Total house-holds	Including:				
		1st decile	2nd decile	3rd decile	4th decile	5th decile
TOTAL HOUSEHOLDS						
Monetary food expenditures (000 roubles)*:	127.4	62.5	90.7	102.8	104.6	123.5
% of the cost of the minimum food basket	50.6	24.8	36.0	40.9	41.5	49.0
URBAN HOUSEHOLDS						
Monetary food expenditures: (000 roubles)	146.6	71.8	105.3	118.3	121.0	142.6
% of the cost of the minimum food basket	58.2	28.2	41.2	46.9	48.0	56.6
RURAL HOUSEHOLDS						
Monetary food expenditures: (000 roubles)	73.6	36.6	49.2	58.2	58.3	70.1
% of the cost of the minimum food basket	29.2	14.5	19.5	23.1	23.1	27.8

* - without alcohol and expenditure on dining out

* - average cost of the minimum food basket, January-December 1996

We put forward two possible hypotheses: (1) in addition to monetary expenses there are unrecorded household resources used for personal food consumption; (2) the poor really do go hungry without receiving adequate nutrition.

In order to confirm or refute these hypotheses, we analysed all possible sources of products, using the budget statistical data on the availability and use of different food products in households. The respective data given in Table 7 show that a significant part of family nutrition is obtained from the *podsobnoe khosiaistvo*.

Having at our disposal data on food prices and the monthly consumption of food products in households, we calculated the monetary equivalent of the consumption of products obtained from the *podsobnoe khosiaistvo* for all the households surveyed and for each decile group.

For each decile group, we used different prices for the same products calculated on the basis of average purchase prices for each decile group.

$$Ц_{kdi} = \frac{\sum H_{kji} * P_{kji}}{\sum H_{kji}}$$

Hkji - average per capita consumption of product "k" (kg), obtained from a podsobnoe khosiaistvo or other non-monetary source in j-month for the i-th decile group.

Pkji - average purchase price of product k (kg) in j-th month by the i-th decile group.

From the results obtained, it may be concluded that, on average over the total sample, nearly 40% of the food consumed by households is produced by *podsobnoe khosiaistvo* (plot of land). It ought to be noted that, when all sources of food are accounted for, household expenditures are reassessed by a greater extent for rural regions. Thus, in the lowest decile income group of rural residents after income reassessments (see Table 7), the purchase of food products amounts to 21% of the total value of food products consumed. On average, in all rural households surveyed, purchased food products constitute 25% of the total cost of all food products consumed.

Therefore, a correlation of monetary incomes with the minimum standard of living for the purpose of poverty evaluation is not quite accurate. The most objective indicator of the actual poverty level is the correlation between the value of the minimum living standard and the value of total expenditure, including also the available cash, expenditures directed to increases in bank savings and a cost assessment of the consumption of non-purchased products. The corresponding calculations are presented in Table 8. These data give foundation for two important conclusions.

Table 7. Monetary evaluation of food consumption (budget statistical data) (January-December 1996)

	Total food expen-diture (roubles)	Included:		
		Purchases from money income	From podsobnoe khosiaistvo	Personal consumption (% from podsobnoe khosiaistvo)
1st decile				
Total households	125 182	49.9	50.1	70.0
Urban households	101 227	70.9	29.1	90.1
Rural households	174 125	21.0	78.9	64.0
2nd decile				
Total households	166 173	54.5	45.5	78.4
Urban households	145 041	72.6	27.4	86.1
Rural households	216 390	22.7	77.3	62.0
3rd decile				
Total households	186 184	55.2	44.8	76.7
Urban households	159 032	74.4	25.6	86.3
Rural households	258 686	22.5	77.5	58.4
4th decile				
Total households	188 864	55.4	44.6	64.0
Urban households	160 608	75.3	24.7	86.6
Rural households	234 392	24.9	75.1	59.3
5th decile				
Total households	221 663	55.7	44.3	75.6
Urban households	188 619	75.6	24.5	86.0
Rural households	284 911	24.6	75.5	59.8
6th decile				
Total households	203 407	57.6	42.4	76.4
Urban households	181 159	75.0	25.0	84.9
Rural households	274 640	23.4	76.6	53.3
7th decile				
Total households	237 283	57.0	43.0	75.3
Urban households	201 954	77.6	22.4	88.1
Rural households	282 703	26.5	73.5	58.2

8th decile				
Total households	240 669	59.1	40.9	75.8
Urban households	202 513	78.9	21.0	87.2
Rural households	340 056	27.0	73.0	58.6
9th decile				
Total households	294 595	57.9	42.1	74.7
Urban households	250 360	78.3	21.7	86.2
Rural households	374 413	26.4	73.7	55.6
10th decile				
Total households	365 269	59.6	40.5	74.0
Urban households	310 707	79.8	20.2	86.8
Rural households	486 716	26.9	73.1	53.4
Average				
Total households	223 465	57.0	43.0	76.2
Urban households	191 298	76.6	23.4	86.3
Rural households	292 174	25.2	74.8	58.4

Firstly, taking into account all potential household possibilities in 1996 according to the statistical data, 25.4% of households could not afford the summary expenditure at the level of the minimum standard, and 10% of households could not afford the cost of the minimum food basket, i.e. were at the extreme poverty level.

If we compare the values of these parameters to the assessments of the poverty level derived from income, it will be obvious that the assessments of the poverty level based on aggregate household expenditures are more optimistic. They are close to the assessment of the share of the population having income entirely below the minimum standard of living for three consecutive months (Appendix 2) and to the assessment of poverty using equivalence scales.

Secondly, the reassessment of the sum of expenditure by the cost of non-purchased food products consumed in the household (from private *podsobnoe khosiaistvo* and other non-monetary sources) bridges the gap between the potential possibilities of urban and rural households of consumption at the level of the minimum standard of living. Thus, according to Table 8, in 1996 the share of the population whose total expenditures were below the minimum standard level, both in the city and in the country, fluctuated in the range of

24-28%. The fact that the rural population has significantly lower monetary incomes is probably the result of the general lack of money in rural areas and the high incidence of non-monetary forms of exchange.

Table 8. Total household expenditures, including reassessment of food expenditures (January-December 1996)

		1st decile	2nd decile	3rd decile	4th decile	5th decile
1. Total monetary expenditures (000 roubles)	Total households	170.6	234.4	274.4	318.3	360.4
	Urban households	197.2	269.2	317.5	364.8	411.8
	Rural households	92.5	134.2	157.3	185.5	212.0
2. Reassessed food expenditures	Total households	62.7	75.6	83.4	84.2	98.2
	Urban households	29.4	39.7	40.7	39.7	46.0
	Rural households	137.3	167.3	200.5	176.0	215.1
Total expenditures (1+2)	Total households	233.3	310.0	359.8	402.5	458.6
	Urban households	226.6	308.9	358.2	404.5	458.0
	Rural households	229.8	301.5	357.8	361.5	427.1

here, total monetary expenditure does not include expenditure on bank savings and available cash

the average cost of the minimum living standard in 1996 was 369.4 thousand roubles and the minimum living standard for the budget statistics sample was 325 thousand roubles

Thus, compared to the average per capita income that is the main indicator of the poverty level in Russia, both the use of equivalence scales converting per capita income into equivalent income and the use of a total expenditure indicator reveal a much lower level of poverty. It should be noted that the effects of the poverty reduction due both to the reassessment of incomes and the conversion to equivalent incomes are interpenetrating and, to a great extent, determined by the same causes. For example, large families are mainly concentrated among the poor, and they usually get significant amounts of food products from their *podsobnoe khosiaistvo*. Moreover, among the rural population for which the significance of the *podsobnoe khosiaistvo* is much higher, the percentage of large families exceeds the average figure for Russia. Therefore, the poverty reduction effects due to the conversion to equivalent income and to the reassessment of incomes cannot be added together. An analysis of their joint influence is needed, although this was not part of the

present project. However, this could become the subject of a separate research project, since it requires considerable financial and intellectual resources.

An additional argument in assessing the correctness of different approaches to the evaluation of poverty is the information on the qualitative parameters of the nutrition of poor and non-poor groups in the population. The budget surveys contain unique data needed for the calculation of the consumption of different food products within households. On the basis of these data and the norms of the nutritional content and energy-producing value of the products consumed, the qualitative parameters of the daily food ratios shown in Table 9 can be calculated.

In correlating the data on daily food consumption with the assessment of the poverty level, it should be taken into account that, according to the data of Professor A.K. Baturin, Deputy Director of the Institute of Nutrition of the Russian Academy of Medical Science, the urban population receives additionally about 15-20% of its daily calorie norm outside the household (public catering, school, kindergarten, etc.) and through alcohol consumption. Therefore, the problem of malnutrition represented by the insufficient calorie content of the food consumed may be actual for only 10% of the urban and 5% of the rural households taking part in the budget surveys.

These estimates are close in their values to the assessment of the extreme poverty level based on the criterion of total expenditure.

Therefore, the extent of poverty resulting in real malnutrition is significantly lower than the share of the population with income not exceeding the cost of the minimum food basket.

As for the composition of nutritional elements in the daily ratios of the households surveyed, the insufficient consumption of protein is clearly seen here. Even if we reassess the daily consumption of protein by 15-20% as a result of meals taken away from home (though the reassessment level in this case should be lower since alcohol contains only calories), the consumption of protein is still insufficient for 50% of the respondents in the budget statistics. In rural areas, the problem of insufficient protein consumption exists among 20-30% of respondents.

At the same time, there is a marked tendency towards the excessive consumption of fats. This unbalanced nutrition is typical not only for the poor population but also for the middle and high income population categories, which shows a certain contradiction between the nutritional traditions in Russia and the norms of healthy nutrition.

Table 9. Food ingredients and calorie content of the daily diet, budget statistical data (January-December 1996)

	Energy-producing value		Proteins		Fats		Carbo-hydrates	
	kilo calorie	% of the norm	grms	% of the norm	grms	% of the norm	grms	% of the norm
1st decile								
Total households	1738.7	77.7	44.0	59.8	52.8	93.0	270.7	76.6
Urban households	1605.4	71.7	40.0	54.3	48.7	85.7	250.8	71.0
Rural households	2096.3	93.7	55.1	74.9	63.5	111.8	323.9	91.7
2nd decile								
Total households	1888.6	84.4	48.1	65.4	59.4	104.6	287.8	81.5
Urban households	1767.4	79.0	44.3	60.2	55.8	98.2	269.6	76.3
Rural households	2216.5	99.0	58.8	79.9	69.0	121.5	337.5	95.5
3rd decile								
Total households	2117.2	94.7	52.6	71.5	68.0	119.7	320.8	90.8
Urban households	1867.5	83.5	48.5	65.9	60.7	106.9	280.0	79.3
Rural households	2813.2	125.6	64.6	87.8	89.2	157.0	439.2	124.3
4th decile								
Total households	1952.8	87.0	53.7	73.0	63.3	111.4	289.1	81.8
Urban households	1932.9	86.4	50.4	68.5	63.4	111.6	287.5	81.4
Rural households	2006.2	89.7	62.6	85.1	64.2	113.0	293.0	82.9
5th decile								
Total households	2152.7	96.2	56.5	76.8	71.8	126.4	318.9	90.3
Urban households	1996.3	89.3	52.3	71.1	67.8	119.4	293.5	83.1
Rural households	2575.0	115.1	67.8	92.1	83.0	146.1	386.8	109.5
6th decile								
Total households	2221.8	99.3	58.4	79.3	75.3	132.6	325.9	92.2
Urban households	2066.4	92.3	54.4	73.9	71.4	125.7	300.7	85.1
Rural households	2651.2	118.5	69.5	94.4	86.3	151.9	396.1	112.1
7th decile								
Total households	2268.1	101.4	60.0	81.5	78.0	137.3	329.1	93.2
Urban households	2098.7	93.8	56.0	76.1	73.7	129.8	301.2	85.3
Rural households	2728.5	122.0	71.3	96.9	89.7	157.9	405.2	114.7

8th decile								
Total households	2366.7	105.8	62.9	85.5	82.3	144.9	340.9	96.5
Urban households	2190.2	98.0	58.4	79.3	77.9	137.1	311.4	88.1
Rural households	2860.3	127.9	76.1	103.4	93.9	165.3	424.0	120.0
9th decile								
Total households	2472.5	110.5	67.0	91.0	87.7	154.4	350.7	99.3
Urban households	2290.2	102.4	61.8	84.0	82.6	145.4	321.8	91.1
Rural households	2965.8	132.5	79.1	107.5	102.5	180.5	429.0	121.4
10th decile								
Total households	2649.5	118.5	72.7	98.8	95.9	168.8	369.6	104.6
Urban households	2464.8	110.2	68.2	92.7	91.7	161.4	338.5	95.8
Rural households	3167.7	141.6	85.0	115.5	109.4	192.6	457.1	129.4
Average								
Total households	2193.3	98.0	57.8	78.5	74.3	130.8	321.4	91.0
Urban households	2038.7	91.1	53.9	73.2	70.3	123.8	296.6	84.0
Rural households	2617.7	117.0	69.1	93.9	85.5	150.5	389.9	110.4
Norm (on average)								
	2236.7	**100**	**73.6**	**100**	**56.8**	**100**	**353.3**	**100**

3.3. Regional differences in the level of poverty

Russia belongs to the countries with a large-scale differentiation between its regions, depending mostly on the differences in the costs of living. The scope of this inter-regional differentiation can be assessed by the relationship between the cost of the minimum consumer basket in the regions with the highest and the lowest prices for the basic commodities. According to Goskomstat data, on average in 1996 the most expensive were the minimum consumer baskets in the Republic of Sakha (Yakutia) (879,000 roubles), in Kamchatka Oblast (823,300 roubles), and Magadan Oblast (789,800 roubles) (Table 10). The lowest cost of the minimum consumer basket was observed in Ulyanovsk Oblast (216,900 roubles), and Tambov Oblast (240,700 roubles).

Table 10. Regional differentiation of poverty in Russia

Region	Per capita minimum standard of living (000 roubles)	Share of the population with incomes below the poverty line (%)	Share of the population with total expenditures below the poverty line (%)
RUSSIA	369.4	34.5	25.4
NORTH REGION			
Karelian Republic	478.4	43.0	37.0
Komi Republic	477.5	33.2	26.2
Arkhangelskaya oblast	446.9	42.0	28.1
Vologodskaya oblast	365.1	37.4	22.8
Murmanskaya oblast	499.1	20.7	16.2
NORTH-WEST REGION			
St.Petersburg	316.8	22.3	18.6
Leningradskaya oblast	318.1	28.2	22.6
Novgorodskaya oblast	325.3	36.4	26.6
Pskovskaya oblast	330.2	54.9	36.2
CENTRAL REGION			
Bryanskaya oblast	264.0	35.7	23.7
Vladimirskaya oblast	310.6	35.9	22.7
Ivanovskaya oblast	303.8	48.7	34.9
Kaluzhskaya oblast	294.2	28.2	19.1
Kostramskaya oblast	304.3	44.3	30.1
Moscow	463.5	19.5	19.8
Moscowskaya oblast	339.6	27.1	21.6

Orlovskaya oblast	259.2	28.1	10.7
Ryazanskaya oblast	285.7	45.8	29.9
Smolenskaya oblast	281.8	37.2	22.6
Tverskaya oblast	293.6	40.0	31.6
Tulskaya oblast	280.3	29.3	16.7
Yaroslavskaya oblast	329.3	28.8	21.4
VOLGO-VYATSKY REGION			
Mari-El Republic	339.0	64.4	50.0
Mordovian Republic	335.5	61.5	47.2
Chuvash Republic	278.6	53.0	39.2
Kirovskaya oblast	354.9	45.9	33.2
Nizhegorodskaya	282.1	20.8	13.6
CENTRAL-CHRNOZEMNY			
Belgorodskaya oblast	265.1	29.0	13.9
Voronezhskaya oblast	271.6	36.1	21.6
Kurskaya oblast	263.8	34.0	24.7
Lipeckaya oblast	267.3	19.5	13.2
Tombovskaya oblast	240.7	36.4	26.8
POVOLZHCKY REGION			
Kalmyk Republic	306.3	70.2	55.1
Tatar Republic	251.3	27.5	21.2
Astrakhanskaya oblast	347.3	52.5	38.2
Volgogradskaya oblast	321.5	38.6	26.4

Penzenskaya oblast	318.7	46.5	36.9
Samarskaya oblast	351.2	31.7	24.4
Saratovskaya oblast	349.7	53.9	32.6
Ulianovskaya oblast	216.9	24.4	18.6
NORTH-KAVKAZSKY REGION			
Adygei Republic	332.1	58.6	28.6
Daghestan Republic	270.5	73.4	57.2
Kabardin-Balkar Republic	288.2	59.4	43.6
Karachai-Circassian Republic	290.2	61.4	45.6
North Ossetian Republic	325.9	51.2	34.3
Krasnodar Territory	273.5	34.1	20.6
Stavropol Territory	268.5	30.6	21.6
Rostovskaya oblast	269.9	38.6	21.2
URAL REGION			
Bashkir Republic	276.2	33.1	24.6
Udmurt Republic	367.3	39.7	30.6
Kurganskaya oblast	311.0	55.6	33.6
Orenburgskaya oblast	307.9	48.0	35.8
Permskaya oblast	338.6	28.1	21.2
Sverdlovskaya oblast	397.5	25.3	18.6
Chelyabinskaya oblast	334.6	23.7	19.6

WEST-SIBERIA REGION			
Altai Republic	358.8	67.0	47.2
Altai Territory	330.2	48.0	32.4
Kemerovskaya oblast	383.2	24.7	19.9
Novosibirskaya oblast	387.2	35.5	22.3
Omskaya oblast	322.0	42.8	27.2
Tomskaya oblast	372.7	37.9	28.4
Tyumenskaya oblast	530.4	28.9	19.7
EAST-SIBERIA REGION			
Buryat Republic	395.5	70.8	60.1
Tuva Republic	528.2	82.2	63.6
Khakass Republic	411.8	50.6	38.2
Krasnoyarsk Territory	366.1	24.4	20.7
Irkutskaya oblast	440.5	36.0	25.8
Chitinskaya oblast	541.4	77.4	62.6
FAR EAST REGION			
Yakyt Republic	879.4	52.6	42.6
Primorski Territory	468.5	33.2	23.1
Khabarovsk Territory	469.1	35.1	26.5
Amurskaya oblast	441.6	61.6	43.6
Kamchatskaya oblast	828.3	38.7	31.5
Magadanskaya oblast	789.8	50.3	40.6
Sakhalinskaya oblast	660.3	47.9	32.6
Kaliningradskaya oblast	302.2	29.3	19.8

By applying the ratio between the maximum and the minimum values of the minimum consumer basket cost to measure the regional differentiation in the cost of living, we obtain a ratio for 1996 of 4:1. Such differences in the cost of living cannot be ignored in the course of the calculation of the average poverty level for Russia. Therefore, the portion of the population with income below the minimum standard of living for Russia is determined in the following way:

1. In every region, the share of the population with income below the regional minimum living standard is determined and these households are classified as poor ones.

2. By adding up these numbers, the total number of people with income below the regional cost of the minimum consumer basket can be calculated.

3. The share of the poor in relation to the entire population of the country may be established.

Thus, the practice of assessing the poverty level adopted in Russia takes into account the regional differences in the cost of the minimum consumer basket, which makes it possible to use the budget statistical data without deflating the effect of the cost of living.

However, it ought to be noted that the regional differentiation in the poverty level does not depend entirely on differences in the cost of living. It is also mediated by inequality in the level of per capita monetary incomes, which is seen clearly in Table 10. If the correlation between the monetary income per capita and the value of the minimum standard of living is taken as an indicator of the poverty level, then the poorest regions of Russia are: the Republic of Tyva (82.8% of the population have per capita incomes below the minimum standard of living); Chita Oblast (77.4%); the Republic of Daghestan (73.4%); the Republic of Buryatia (70.8%); the Republic of Kalmykia (70.2%); and the Republic of Altai (67%). These territories of the Russian Federation can be termed the poverty concentration areas, since the majority of the population are poor, and over half of the inhabitants are permanently poor. The poor households of these regions constitute 7.8% of the total number of the poor citizens of Russia, namely: Tyva, 0.5%; Chita Oblast, 1.7%; Daghestan, 3.5%; the Republic of Buryatia, 1.5%; the Republic of Kalmykia, 0.4%; and the Republic of Altai, 0.3%. In general, it should be noted that an enhanced poverty concentration is observed in the East Siberia and the North Caucasus republics. At the same time, the poor territories in East Siberia are the neighbours of the prosperous Krasnoyarsk Krai (where 24.4% of the population have income below the minimum standard of living and only 6.6% are permanently poor). The problems of poverty in these territories can be solved only by radical changes in the entire economics of the regions. Targeted social support will be of no help here, since practically everybody is poor.

From the point of view of the scale of the incidence of poverty, the most prosperous are: Lipetzk Oblast (share of poor 19.5%); Moscow (also 19.5%); Murmansk Oblast (20.7%); Nizhny Novgorod Oblast (20.8%); St. Petersburg (22.3%); and Chelyabinsk Oblast (23.7%). In spite of these regions being among the wealthiest, 9% of the total poor families in Russia reside on their territories. In the wealthy regions, the solution of the problem of poverty can be found in the redistribution of internal resources by means of targeted social support.

The application of summary household expenditure as the poverty assessment criterion (Table 10) reduces significantly the value of the poverty level in all regions of Russia, except for the megalopolises of Moscow and St. Petersburg. In our case, for constructing the indicator of summary expenditure, and in particular for assessing the consumption of food products supplied from the private *podsobnoe khosiaistvo*, regional prices for food items were used. As has already been mentioned, for each decile group of income distribution we used the average purchase prices applicable to this specific group. The application of summary expenditure indicators for the comparative analysis of poverty does not alter significantly the list of the poorest regions. However, as assessed by this procedure, the poverty level figures of some territories (Orel Oblast, Krasnodar Krai, Rostov Oblast, Tula Oblast, Kaliningrad Oblast, and some others) came close to those of the six prosperous regions distinguished previously and even took the leading positions in this group: assessed by summary expenditure parameters, the smallest share of the poor is exhibited by Orel Oblast (10.7 %).

In general, a significant (5-6 fold) inter-regional differentiation in the poverty level can be observed in Russia, as estimated both by per capita income and by summary expenditure. This fact is obviously determined by the inequality in the economic development of the territories which, in the Soviet period, used to be compensated for, to some extent, at the expense of inter-regional redistribution and the prevalence of fixed prices for commodities and services. The liberalisation of prices and the increased economic independence of the subjects of the Russian Federation revealed economic disproportions which is manifested in the increased inter-regional differences in the standard of living.

4. A MULTI-DIMENSIONAL POVERTY MEASURE

The provision of households with such material components as property and wealth is a rather important constituent part of their economic potential. The characteristics of these components, being a reflection of the long-standing relationship between family incomes and real consumption possibilities, are, therefore, significant indicators of living standards and social stratification. Under the crisis conditions of the transition period, non-monetary material components are also the strategic resources of household microeconomics that can facilitate their successful adaptation to the new macroeconomic conditions.

Therefore, a broader interpretation of socio-economic differentiation (taking into account both incomes and the other material components of households) can make somewhat more realistic both the general picture of the existing stratification of well-being in Russia and the present perceptions of the living standards of large socio-demographic groups and their place in the new social scale, based on an analysis of their current incomes.

Such a broad approach to treating the problems of social stratification and poverty in the theory and practice of social policy goes back, on the one hand, to Townsend's study of households carried out in Britain in the late 60s. "Deprivation" in his works is related to a certain set of household material components which ensure the possibility of maintaining at least a minimal level of social relations. A lack of such components implies people's actual falling out of society.

On the other hand, a broader interpretation of social differentiation was called into being by one of the key issues of implementing certain social policy measures aimed at poverty eradication the problem of mass income concealment owing to the prevalence of the shadow economy .

This problem faced Latin American countries in the mid 70s when they started liberal reforms. It is worth noting that, among the most painful problems of the social sphere are those connected with the deficiency of the material resources necessary for the full-scale participation of a considerable part of the population in the sharply-changing social life, as well as the ever-growing dependency of the middle strata on the shadow sectors of the economy, which creates in the official statistics an illusion of total poverty.

Recently, in a number of Russian[17] and international[18] studies, expert methods of comparing the well-being of the population on the basis of a multi-

[17] Bogomolova T. and others. Social Structure: Inequality in Well-being. Novosybirsk. 1992.

dimensional evaluation of living standards have been tested. The proposed methods are mostly aimed at developing an integrated indicator that would allow the avoidance of difficulties connected with estimating the monetary value of all the household material components. We shall try to demonstrate this method of analysing the process of social stratification by means of the complex evaluation of the well-being of the population on the basis of the data obtained from the sociological survey "Poverty in Russia", carried out by the authors of this report as members of the research team headed by A. McAuley and M. Mozhina (the object of the survey was 900 households in St. Petersburg, conducted during May 1997).

The multi-dimensional evaluation of well-being is carried out in two stages. In the first stage, family well-being is defined on three five-interval factor scales: a) current income; b) housing conditions; and c) disposable property. In the second stage, according to the position of families on these factor scales, we define the position of households on an integrated scale by five measures: a) inadequate resources; b) below average level of resources; c) average resources; d) above average level of resources; e) well-to-do. The hierarchical distribution of households by the integrated indicator can be interpreted as the stratification of the population by levels of well-being, while the typology itself is regarded as a stratification scale. Thus, the bottom part of the social spectrum will embrace families which could be classified as poor in "all respects" and the top part families marked higher not only by their incomes but also by greater material components on all the remaining dimensions of living standards on the whole.

At the present stage of the study we find it expedient, when defining the graduation indicators on the factor scales, to take into account the social standards and practical approaches to the solution of the problem of poverty that are already laid down in the new Russian legislative acts and initiatives.

According to the "Law on the principles of housing policy in the Russian Federation" (1992), the main indicator of households housing conditions is the indicator of per capita *dwelling space* generally accepted in international statistics.

Khakhulina L.,Tucek M. Material Well-being in Post-Socialist Countries: Comparative Analyses. Moscow, 1994.

[18] Blaszczak- Przybycinska I Multidimensional statistical analysis of poverty in Poland , in Polish Statistical Association & Central Statistical Office, eds. (1992), pp. 307-327.

Cheli B., Lemmi A: A Totally Fuzzy and Relative Approach to the Multi-dimensional Analysis of Poverty , Economic Notes, 1995, 1, pp. 115-134.

Formerly, the indicator of per capita *living space* was used in the soviet statistics and in the practice of allocating free state housing. The actual average values of dwelling space across Russia are taken as reference points for defining new social standards which are to become criteria for granting housing subsidies in the near future.

All this was taken into account while selecting the main parameters for the construction of the scale of incomes and housing conditions as well as the rules for the grouping of their values. An indicator of *equivalent income*, including any large family saving effect , was defined while an indicator of *per capita dwelling space* was taken as the main characteristic of the household s living conditions.

Graduations of the indicator values were defined in relation to the average value across the sample. But the limit value of the first group could not be below the fixed minimum standard. According to this, the following rules of the classification of the scales were set:

1. The scales of the distribution of equivalent income (I) and of dwelling provision (H) were used for defining the value of average income across the sample *Ime* (median per capita income) and average provision of dwelling *H* (calculated as the mean value). These average values (Ime, H) were taken as the middle, third interval on a five-interval scale.

2. Proceeding from this, the borderline between the first and second intervals I(1) and H(1) was set at the level of 40% of Ime and H.

3. The other graduations on the scale were derived on the basis of the first and second intervals I(1) or H(1), at a step also of 40% of the average value of Ime or H. The last interval was left open.

The adjustment of households position on the scale was made by taking into account the existing social standards of dwelling space. Thus, according to legislation in the Russian Federation, the social standard for a family of more than 3 members is 18 sq. m. per family member; for a single person, it varies between regions from 32 sq. m. (the lowest level in Moscow) to 40 sq. m.

Correspondingly, single people and couples within the social standard limits were moved from the higher resource groups (intervals 4 and 5) to the middle resource group (interval 3).

Corresponding calculations of the differentiation in housing are given in Table 11.

The borderline between the first and second intervals on the income scale was shifted and set equal to the regional subsistence minimum (477,000 roubles). The differentiation of equivalent income is given in Table 12.

Table 11. Distribution of households by housing conditions

	Intervals*					Total
	H(1)	H(2)	H(3)	H(4)	H(5)	
Households (%)	7.1	32.9	39.4	11.6	9.0	100
Per capita dwelling space (mean value, sq. m.)	5.4	11.7	18.8	25.3	41.8	18.3

* H(1) - below 0.4* H
H(2) - from 0.41*H to 0.8*H
H(3) - from 0.81*H to 1.2*H
H(4) - from 1.21*H to 1.6*H
H(5) - above 1.6*H

Table 12. Distribution of households by equivalent income

	Intervals*					Total
	I(1)	I(2)	I(3)	I(4)	I(5)	
Households (%)	21.2	13.0	28.6	14.3	22.9	100
Per capita income (mean as a share of the min. consumer basket)	0.7	1.1	1.6	2.2	5.0	2.2

* I(1) - below poverty line
I(2) - from poverty line to 0.8*Ime
I(3) - from 0.81*Ime to 1.2*Ime
I(4) - from 1.21*Ime to 1.6*Ime
I(5) - above 1.6*Ime

The most debatable issue relating to the construction of the complex evaluation of well-being is the expert measurement of household property. The main question is: which parameters should be taken as the most significant and the most characteristic of social stratification and which ones should be disregarded. This aspect of microeconomic potential has many dimensions. Households differ from one another in the sets of disposable material components possessed, and to no lesser degree in their quality (old-new, fashionable-traditional, expensive-cheap).

In present-day Russia, there is a general tendency characteristic of the market economy: the decline in the liquidity (and therefore in the significance as an economic resource) of all kinds of household wealth that are produced in quantity. The relative cost of various components of family wealth and property

is significantly changing and approaching market cost. Thus, after 1992, the relative value of durable goods which determined the standards of prestige consumption during Soviet time (primarily, imported audio and video equipment, and computers, the prices of certain types of which goods were comparable to the prices of constructing owned co-operative dwellings) has sharply declined compared to the pre-reform period.

At the same time, there has been a considerable increase in the relative cost of some other material components which have retained their considerably high liquidity. This concerns, first and foremost, all kinds of real estate. With the exception of Moscow and St. Petersburg, the cost of a home-produced car remains comparable with the cost of private dwellings.

Besides the means of transportation, among the most widespread kinds of property possessed by the middle strata of the population are: dwellings; *dacha* (summer cottages); and plots of land. Taking into consideration the ongoing decline in the significance of the bulk of durable goods as a liquid resource, we defined the graduations on the third factor scale the amount of household property with an allowance for:

- dwellings possessed by households (apartments, houses);
- second dwelling/*dacha*;
- car;
- plot of land.

The presence of all four kinds of property corresponds to the fifth interval on the scale; three kinds to the fourth interval; two kinds to the third one; one kind to the second; and a lack of such property to the first. The distribution of families on the property scale is presented in Table 13.

Table 13. Distribution of households by disposable property

	Intervals					Total
	1	2	3	4	5	
Households (%)	11.7	37.8	20.2	19.1	11.2	100

When the households were distributed by the three factor scales, an integrated (stratification) scale was constructed by summing up the scores (points) corresponding to the interval's number on the factor scales. Five groups were arranged on the scale hierarchically: households with total scores up to 5 points were classified as having inadequate resources; with 6 and 7 points below average resources; 8-10 points an average level of resources; 11 and 12 points above average resources; while those with 13 points and more were well-to-do households. As a result of our research, we obtained a general

picture of the stratification of households on the basis of the complex evaluation of well-being (Table 14).

Table 14. Social characteristics of stratification groups

	Stratification groups					Total
	1	2	3	4	5	
Households (%)	11.3	20.1	44.1	19.3	5.2	100
Characteristics:						
Equivalent income (mean as a share of the minimum consumer basket)	0.9	1.1	2.0	3.6	5.8	2.2
Per capita dwelling space (mean value, sq. m.)	10.6	14.6	19.6	21.5	26.1	18.3
Savings over 1m roubles (%)	7	6	22	37	70	22
Savings over 5m roubles (%)	1	0	6	14	40	8
Disposable housing (%)	31	74	88	97	100	81
Dacha (%)	0	13	35	62	83	34
Car (%)	0	8	19	48	85	24
Plot of land (%)	4	22	45	75	85	43

Distributions by the objective characteristics of living standards (Table 14) give a non-contradictory multi-dimensional picture of the income-wealth differentiation taking shape in society; and they prove the necessity of applying multi-factor approaches to the social typology of well-being, which can serve as a basis for an improvement of the methods of identifying groups with really poor well-being. As we can see from the obtained distribution by stratification (Table 14), this is, on the whole, biased towards an under-provisioning. Thus, about one-third of households (31.4%) are below the average level of well-being (group 1 + group 2), while only about one-quarter of households (24.5%) are above the average level (group 4 + group 5).

At the same time, the lower income groups (groups 1 and 2) are quite similar in respect to the levels of their current incomes and monetary savings, in particular. The data in Table 14 show that the main difference between the two lower groups lies in the possession of own dwellings and accumulated wealth.

The share of the poorest households, according to the multi-dimensional evaluation (11.3%), is considerably less than that obtained by the poverty measure officially adopted in the city of St. Petersburg 21.2% (Table 12). So, in relation to the average level in the city, almost half of the households which are poor in terms of current incomes become not so poor when other parameters of well-being are taken into account. At the same time, a certain part of households (3% of the total) are not poor by current incomes, but they still fall into the group with the worst living conditions by their total assets. This group should also become the object of State social policy in the fight against poverty.

On the basis of the constructed typology, we can identify 3 different types of poor households. The first group of the "stable poor" (8.3% of households) comprises households which are well-being outsiders, both in relation to the official poverty line (set on the basis of the minimum consumer budget) and by the multi-dimensional evaluation. The second group (12.9% of households) can be regarded as having the better chance, in comparison with the first one, of relying on their own resources in the struggle for raising their well-being, given a capacity to use other assets in addition to incomes. And finally, the third group (3% of households) which, on the contrary, has a lesser chance of maintaining a proper living without State support, as, despite having incomes above the minimum standard level, it is classified as the poorest group by household total assets.

Let us consider the position of these groups on the factor scales: disposable property, housing provision; and equivalent incomes. The data in Table 15 allow us to judge the share of the various factors affecting the poverty of households of the different types.

Table 15. Average points for various types of poor households on the 5-point factor scale

Factor scales	Types of poor households *			Total
	1	2	3	
Property	1.4	2.7	1.2	2.8
Dwelling space	2.1	3.4	1.4	2.8
Income	1.0	1.0	2.2	3.1
Total points	4.5	7.1	4.8	8.7

*Types of poor households:

1 - poor by both incomes and multi-dimensional evaluation;

2 - poor by incomes, but not by multi-dimensional evaluation;

3 - not poor by incomes, but poor by multi-dimensional evaluation.

Table 15 shows that poor households of the second type have accumulated considerably high potential well-being. Thus, they surpass the average urban level of housing provision and possess other assets at the average level for city dwellers. More than one-third of these households are in the upper part of the distribution by housing provision and one-quarter are in the upper part of the distribution by total assets.

It was the well-being potential accumulated during soviet times (primarily dwellings) that, at the first stage of the transformation, became a significant factor in mollifying the after effects of the sharp (2.5 times) fall in real incomes. At the same time, own housing belongs mainly to middle-aged and older families which became owners of their dwellings in the course of privatisation. As to younger families, even comparatively high incomes do not ensure them shelter in the present conditions because of the high prices of new housing and the lack of a developed renting market.

The third group, although very small 3% of total households represents one of the categories of the new poor, which is characterised by minimal wealth potential. This group is consolidated by extremely pessimistic views concerning the possibility of solving the acute housing problem 77% of the heads of households in this group do not see such possibilities while the average level of pessimism among those in need of dwellings is 33% across the sample. This group quite fully reflects the main kinds of housing privations typical for people with "permanent" places of residence overcrowding (housing provision 6.9 sq. m.) and a lack of resources for manoeuvre on the housing market (the formal right to privatisation of part of State housing has not been realised) or else living in hostels, communal flats belonging to enterprises, or rented dwellings. Incomes in this group are above the minimum standard, but are below the median. It also gives no possibility of resolving the acute housing problem.

Almost all these families are with children of school age (mainly complete families). Each family has at least one earner. The earners are mainly specialists and skilled workers in State enterprises. But the existing legislative norms concerning social assistance do not cover these disadvantaged families and leave them without State support.

5. POVERTY EVALUATION AND TARGETED SOCIAL ASSISTANCE

In developing the survey programme, the researchers on this project were intending to propose a new method for the reassessment of distribution by income which could result in a correction of the poverty level.

The initial hypothesis suggested dividing all households into two groups: households in which people were mostly employed in the private sector; and those in which people were mostly employed in the state sector. It was proposed to reassess the incomes of each group by different parameters.

However, in the second half of 1996, certain destructive tendencies in the remuneration of people employed at all kinds of enterprises became apparent. On one side, cases of the delayed payment of wages became more common, both for state and private enterprises. On the other hand, different forms of payment in kind are becoming common, and it is difficult to calculate their monetary equivalents. Therefore, we started to search for new approaches that would allow us to reassess incomes in the absence of detailed information, using the parameters that are the easiest to measure and to verify.

In conducting research for this project, we came to the conclusion that the most objective parameter characterising the current material possibilities of a family is not income but family expenditure, including the cost of products (mostly food) produced and consumed within the household. In the course of consultations with the Moscow branch of the World Bank, we accepted the factor method of the assessment of the poverty level applied in Chile in 1980 within the framework of the programme of issuing social allowance cards.

Applying the factor method of poverty evaluation to the situation in Russia, the total expenditure parameter as the basic indicator of household wealth was used. Corresponding calculations for Russia on the basis of the third round of the RLMS[19] were made by Jeanine Braithwaite in February 1997.[20]

The RLMS database cannot be used for these calculations since regional factors become significant here (see the Intermediate Report), and the RLMS data are not representative from the regional perspective. Therefore, for the approbation of the factor methodology of the assessment of the poverty level, a database on the individual budgets of 616 households in the Volgograd Oblast was compiled with the participation of Goskomstat and Jeanine Braithwaite on the basis of the budget statistical data, including average 1996

[19] RLMS Russian Longitude Monitoring Survey based on the All-Russia sampling of the population carried out each year since 1992. The survey data are accessible on the home page on the world-wide web.

[20] Jeanine Braithwaite consultant of the World Bank on poverty, gender analysis and the state sector management division.

data on the monetary incomes and expenditures of households, an assessment of the food products consumed, calculated in July 1996 prices, as well as data on housing conditions and the number of durable goods available.

In order to construct the equation of regression, the standard procedure of multiple regression SPSS was used. The calculated parameter of the potential consumer expenditures per capita of households (C) was taken as an independent variable determined as the sum of the different expenditure components:

$$\mathbf{C} = \mathbf{C_1} + \mathbf{C_2} + \mathbf{C_3} + \mathbf{C_4},$$

where

$\mathbf{C_1}$ - cost evaluation of the food products consumed, including the consumption of products from *podsobnoe khosiaistvo*;

$\mathbf{C_2}$ - expenditures on non-food products;

$\mathbf{C_3}$ - expenditures on services;

$\mathbf{C_4}$ - other expenditures.

At the first stage of the construction of the regression model, the pairwise coefficients of correlation were calculated for the variables which, in our opinion, could be included in the multiple regression equation. Significant pairwise coefficients of correlation were obtained for the following variables:

D - per capita registered income;

X_1 - number of children under 16;

X_2 - number of females aged 30-54;

X_3 - number of males aged 60 & over;

X_4 - number of females aged 55 & over;

X_5 - if the household is rural;

X_6 - number of rooms in house/flat;

X_7 - if the household has a dacha;

X_8 - if the household has a vodoprovod (water-supplay).

The distinction of X2 among the significant factors (the number of women aged 30-54) requires additional explanations. Moreover, the value of the t-statistic for the factor A1 (the number of men aged 16-29) was sufficiently close to being significant. Content analysis of these factors showed that the population categories under consideration included many people who had their salary payments delayed; therefore we developed additional variables that characterise in some measure the delays in receiving salaries and transfers (pensions, social allowances, etc.). As a result, new variables have been constructed instead of variables X2 and A1:

Table 16. Significance t-statistics for variables

Variable	Explanation of variable	t-stat	Significance t-stat
Significant variables			
D	per capita equivalent income	28.038	.0000
X_1	number of children under 16	-8.781	.0000
X_2	number of females aged 30-54	-2.967	.005
X_3	number of males aged 60 & over	-2.864	.005
X_4	number of females aged 55 & over	-3.196	.001
X_5	if the household is rural	-8.037	.0000
X_6	number of rooms in house/flat	3.028	.005
X_7	if the household has a dacha	2.958	.005
X_8	if the household has a vodoprovod	-2.932	.005
Not significant variables			
A_1	number of males aged 16-29	-1.162	.2457
A_2	dwelling space	0.618	.5369
A_3	living space	0.540	.5891
A_4	if household has a garage	1.047	.2956
A_5	if household has a car	1.352	.1772
A_6	if household has a refrigerator	-0.527	.5987
A_7	if household has a washing machine	0.165	.8690
A_8	if household has a TV	0.798	.4249
A_9	if household has a VCR	0.037	.9701
A_{10}	if household has central heating	-0.882	.3782
A_{11}	if household has a bathroom	0.802	.4227
A_{12}	if household has gas	-1.511	.1313
A_{13}	if household has a telephone	0.267	.7882

X10 the number of family members aged 16-29 who, in 1996, for three or more months, had their individual incomes equal to zero although these incomes were supposed to exist (i.e. for three or more months per year wages, scholarships or allowances were not received and no other individual incomes existed);

X11 the number of family members aged 30-54 who, in 1996, for three or more months, had their individual incomes equal to zero although these incomes were supposed to exist.

We also analysed the delays in receiving certain kinds of income (salaries, pensions, scholarships, unemployment allowances, allowances for children, etc.) and checked their autocorrelation with other variables. As a result, another variable was included in the equation:

X12 the failure to receive child allowances for 6 months or more in 1996.

An additional analysis was required in respect of the effect of factor X2 (the presence of a running water supply in the dwelling), since this factor entered the equation with a "minus" sign; therefore, the incomes of families inhabiting apartments with running water will be reassessed to a smaller degree than the incomes of families not having running water. Detailed qualitative analysis showed that families who do not have running water in their houses mostly live in rural areas and small towns. All such households exhibit a high magnitude of factor C1 (expenditures on food products, including a monetary assessment of food products received from the *podsobnoe khosiaistvo*). Precisely, this quantity is the objective economic basis for the significance of factor X5 (residence in a rural area). However, the presence of the large values of C1 in part of the households, mostly inhabiting small towns and rural settlements and, partly, in the centre of the Oblast (these are mostly private houses not provided with running water), was manifested in the fact that the effect of factor X8 (presence of a supply of running water in a dwelling) became a significant factor (with a "minus" sign). All attempts to replace variable X8 with others (e.g. the index of incomes from the *podsobnoe khosiaistvo* or the index of residence in small towns and rural areas) only worsened the statistical parameters of the model.

As a result, the following model was recognised as the most significant model.

$$C = 251.4 + 0.61D - 42.1X_1 - 43.2X_3 - 37X_4 + 115.2X_5 +$$
$$+ 17.9X_6 + 13.3X_7 - 24.7X_8 - 39.2X_{10} - 32.3X_{11} - 22.6X_{12},$$

where

C - calculated parameter of potential household consumer expenditures per capita;

D - per capita equivalent income;

X_1 - number of children under 16;

X_3 - number of males aged 60 & over;

X_4 - number of females aged 55 & over;

X_5 - if the household is rural;

X_6 - number of rooms in house/flat;

X_7 - if the household has a dacha;

X_8 - if the household has a vodoprovod;

X_{10} - number of family members aged 16-29 who, in 1996, for three or more months, had zero individual incomes, even though these incomes were supposed to exist;

X_{11} - the number of family members aged 30-54 who, in 1996, for three or more months, had zero individual incomes, even though these incomes were supposed to exist;

X_{12} - the failure to receive child allowances for 6 months or more in 1996.

For the present equation (Appendix 5), the coefficient of multiple correlation (Multiple R) determining the share of the explained variation in the total variation of variable C is equal to 81.4%, and F, the criterion evaluating the ratio of the mean squares of the deviations determined and undetermined by the regression, is equal to 198.9 and exceeds considerably the critical value at the 95% confidence level (significance F= 0.000).

Taking into account the fact that, in the near future, the problem of providing guaranteed income at the level of the minimum standard of living will not be solved in Russia, and the struggle against poverty will have to rely on targeted support, a factor evaluation of poverty can be used by the regional authorities for identifying families entitled to social allowances.

In the example of the given equation, we can show how the method described modifies the evaluation of the current material wealth of the family, as opposed to its current incomes. Let us suppose that a married couple of working age have no children, are not unemployed but have no incomes (e.g. wages are not paid), own a car and reside in Moscow. After reassessment, their potential consumer possibilities correspond to 483,200 roubles per capita. Therefore the family is not poor, since the minimum standard of living is 369 thousand roubles.

The use of a broad approach to the problems of the realistic evaluation of poverty proposed by us can encourage a more active commercial use of the material assets accumulated in households. On the other hand, this approach makes it possible to develop targeted social assistance on a more sound statistical basis, since factor (grade) poverty evaluation accounts more precisely for the specific differences related to the different costs of life and the demographic situation in different regions, as well as the non-demographic factors which, other conditions being equal, can either facilitate or prevent the process of the adaptation of households to the market environment.

APPENDIXES

Appendix 1. Values of poverty indices in Russia in 1996 (budget statistical data)

	FGT for Q=0			FGT for Q=1			FGT for Q=2		
	house-holds without children	House-holds with children aged 0-15	Pensi-oner house-holds	house-holds without children	house-holds with children aged 0-15	Pensi-oner house-holds	house-holds without children	house-holds with children aged 0-15	Pensi-oner house-holds
I quar-ter	27.4	53.8	17.7	13.6	27.8	5.85	8.57	17.87	3.6
II quar-ter	24.4	48.4	18.0	12.7	26.3	6.9	8.1	16.57	4.54
III quar-ter	23.5	45.2	18.2	15.1	27.4	10.9	10.9	18.38	9.34
IV quar-ter	14.7	33.7	7.3	11.5	21.6	8.5	8.39	14.2	7.62

Appendix 2. The indices of the acuteness and duration of poverty in 1996 (budget statistical data; in % of total households)

	Poor households	Poor households constantly for three months	Households below 50% of poverty line
Total households: - I quarter	42.3	26.5	13.1
- II quarter	36.7	22.4	10.3
- III quarter	34.5	18.8	9.8
- IV quarter	24.2	12.6	6.4
Urban households: - I quarter	32.5	18.2	5.9
- II quarter	28.6	15.9	5.1
- III quarter	27.0	13.4	5.1
- IV quarter	17.7	8.3	3.2
Rural households: - I quarter	70.5	50.4	33.9
- II quarter	62.5	43.1	26.6
- III quarter	58.7	36.5	24.7
- IV quarter	45.2	26.1	16.5

Appendix 3.1. Distribution of expenditure, budget statistical data, Quarter III 1996, % (total households)

Income groups	Food	Non-food goods	Services	Alcohol	Other	Total expenditure
1st decile	51.4	23.2	15.9	1.6	7.9	100
2nd decile	54.7	20.4	14.5	1.6	8.8	100
3rd decile	53.2	20.7	14.4	1.6	10.1	100
4th decile	51.2	22.1	14.0	1.7	11.0	100
5th decile	49.5	23.2	13.9	1.8	11.6	100
6th decile	46.8	25.6	13.3	1.8	12.5	100
7th decile	44.5	25.5	14.2	1.9	13.9	100
8th decile	41.9	26.9	13.7	2.0	15.5	100
9th decile	38.3	29.3	14.0	2.0	16.4	100
10th decile	27.7	35.2	15.4	1.8	19.9	100
Average	41.4	27.6	14.4	1.8	14.8	100

Appendix 3.2. Distribution of expenditure, budget statistical data, Quarter III 1996, % (Urban households)

Income groups	Food	Non-food goods	Services	Alcohol	Other	Total expenditure
1st decile	52.2	22.1	17.0	1.4	7.3	100
2nd decile	55.3	19.3	15.5	1.4	8.5	100
3rd decile	53.9	19.4	15.4	1.5	9.8	100
4th decile	51.9	20.9	14.9	1.5	10.8	100
5th decile	50.2	21.9	14.9	1.6	11.4	100
6th decile	47.2	24.6	14.2	1.7	12.3	100
7th decile	45.0	24.6	15.1	1.7	13.6	100
8th decile	42.4	25.8	14.7	1.8	15.3	100
9th decile	38.6	28.6	14.9	1.8	16.1	100
10th decile	28.3	33.6	16.6	1.7	19.8	100
Average	42.0	26.4	15.4	1.7	14.5	100

Appendix 3.3. Distribution of expenditure, budget statistics data, Quarter III 1996, % (Rural households)

Income groups	Food	Non-food goods	Services	Alcohol	Other	Total expenditure
1st decile	47.3	29.0	10.3	2.9	10.5	100
2nd decile	51.1	26.8	9.1	2.6	10.4	100
3rd decile	49.5	28.0	8.7	2.5	11.3	100
4th decile	47.6	28.6	9.2	2.6	12	100
5th decile	45.6	29.8	8.7	2.8	13.1	100
6th decile	44.4	31.2	8.5	2.6	13.3	100
7th decile	41.9	30.4	9.2	2.5	16.0	100
8th decile	39.4	32.5	9.1	2.7	16.3	100
9th decile	36.6	32.7	9.5	2.6	18.6	100
10th decile	25.2	43.3	9.6	2.3	19.6	100
Average	38.4	37.5	9.5	2.4	12.2	100

Appendix 4. Statistical parameter for the regression equation (Equivalent scale).

Multiple R - 0.51129

R Square - 0.26142

F = 43.18124 Signif. F = 0

	Coefficient	SE B	T stat	Sig T
lnX	0.195667	0.02486	7.871	.0000
N2	-0.172463	0.048475	-3.558	.0004
N3	-0.332406	0.047994	-6.926	.0000
N4	-0.334587	0.050631	-7.003	.0000
N5	-0.340162	0.067354	-5.050	.0000
Constant	10.108391	0.3365	30.035	.0000

Appendix 5. Statistical parameter for the regression equation (potential consumer household expenditures per capita).

Multiple R - 0.81375

R Square - 0.66219

F = 198.9 Signif. F = 0

	Coefficient	T stat	Sig T
D	0.61	26.678	.000
X1	-42068	-5.968	.000
X3	-43236	-1.988	.047
X4	-36981	-2.814	.005
X5	115225	7.256	.000
X6	17921	3.844	.000
X7	13277	3.610	.000
X8	-24654	-3.435	.001
X10	-39180	-4.205	.000
X11	-32297	-2.833	.005
X12	-22620	-1.758	.009
Constant	251422	11.192	.000