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CONSUMER GOODS AND DOMESTIC TRADE

(FOUO 6/81)

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USSR REPORT

Consumer Goods and Domestic Trade

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CONSUMER GOODS PRODUCTION AND DISTRIBUTION

SOAP INDUSTRY TASKS IN 11TH FIVE-YEAR PLAN

Moscow MASLO-ZHIROVAYA PROMYSHLENNOST' in Russian No 8, Aug 81 pp 2-5

[Article by B.N. Chubinidze, chief of the Uprraszhirmaslo [expansion unknown] of ? the USSR Ministry of the Food Industry, candidate in technical sciences: "The Basic Tasks of the Soap Industry in the 11th Five-Year Plan"]

[Text] In the "Basic Directions of the Economic and Social Development of the USSR For the Years 1981-1985 and to the Period up to 1990" the chief task of the 11th Five-Year Plan is defined as ensuring a further improvement of the well-being of Soviet people by means of stable economic development, the transfer of the economy to an intensive path of development, and a more efficient use of the country's production potential.

The workers of the country's soap industry are faced with large tasks in the new five-year plan. As was stated at the 26th CPSU Congress, production in the branches of the food industry has to increase by 23-26 percent. In recent years the population's demand for various detergents has not been fully met. This was noted in the speech by the General Secretary of the CC CPSU comrade L.I. Brezhnev at the November (1979) Plenum of the CC CPSU.

The production of detergents in the country during the 10th Five-Year Plan is shown in Table 1 by years (in thousands of tons).

Table 1

Output	1970	1975	1976	1977	1978	1979	1980	1980 in % of 1976
Household soap in nature	684	710	695	610	620,7	578,2	664,2	95,5
Toilet soap	180	226	223,3	224,8	223,5	247,7	282,5	126,7
Synthetic detergents	471	769	822	824	887	859	1012,4	122,3
Including in the USSR Ministry of Food Industry	190,4	206,7	215	297,7	193,0	167,4	167,8	78,0

The decrease in the production of synthetic detergents in the USSR Ministry of Food Industry is the result of the transfer of a number of enterprises to the USSR Ministry of the Chemical Industry.

At the present time in the system of the USSR Ministry of Food Industry household soap is produced at 37 enterprises, toilet soap at 26, and synthetic detergents at 7.

Household and toilet soap is brewed basically by the boiler method. Our basic household soap is manufactured at domestic vacuum-dryers, and toilet soap is manufactured primarily at domestic ELM lines with a productivity of two tons per hour. There are in operation 118 VSU [expansion unknown] and 28 ELM [expansion unknown] on which more than 80 percent of the toilet soap is produced.

In 1980 two highly productive units for the production of toilet soap with a productivity of four tons per hour were purchased abroad and put into operation at the Gor'kiy Oils and Fats Combine. They are now being mastered. In addition, three simular units have been purchased for the Kazan' Chemical Combine imeni M.N. Vakhitov, the Vinnitsa Oil and Fat Combine, and the Moscow "Svoboda" Production Association of the chemical industry which will go into operation this year.

The following assortment of soap is produced: 60, 70, and 72 percent household solid soap, household liquid soap, 40 percent olein textile soap, 72 percent with special additives, five types of solid toilet soap--"Ekstra," groups I, II, III and a children's group, liquid toilet soap, soap shavings, and powdered soap.

The assortment of toilet soap is too diverse. Despite the work to narrow and regulate it, at the present time 130 brands of toilet soap are being produced.

The proportion of the children's group and the "Ekstra" group in the total production of toilet soap comes to 25 percent, of group I--15 percent, II--20 percent, III--40 percent.

Work was performed during the 10th Five-Year Plan to improve the quality of the soap being produced. More than 20 automatic soap packagers have been purchased abroad and installed, with the result that the production of closed soaps has been brought to 90,000 tons a year (in 1976--65,000 tons). Before 1985 it is planned to substantially increase the production of detergents (Table 2, in thousands of tons).

The production of household soap will increase in the 11th Five-Year Plan in the country as a whole by 23.5 percent without an expansion of existing capacities.

Work will continue at soap-making enterprises to increase labor productivity, mechanize production processes, introduce new equipment, and improve the quality of the output being produced and protect the environment.

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Table 2

Output	1980	1985 (plan)	1985 in % of 1980
Household soap	664,2	850	128,0
Toilet soap	283	430	151,9
Synthetic washing agents	1012,4	1500	148,2
Including in the USSR Ministry of Food Industry	167,8	180	107,3

Despite the substantial increase in the production of synthetic detergents in the country as a whole, no increase in capacities for the production of this output is planned at the synthetic detergent enterprises of the USSR Ministry of Food Industry.

With the increased production of toilet soap there will be a substantial increase in its per capita consumption in the Union as a whole and the republics and economic regions (Table 3).

Table 3

Republics and Rayons	1980				1985			
	Population, millions	Total consumption, thousands of tons	Per capita consumption, kilograms	Output, thousands of tons	Population, millions	Total consumption, thousands of tons	Per capita consumption, kilograms	Output, thousands of tons
USSR	265,9	318,0	1,2	283,0	277,8	430,0	1,55	430,0
RSFSR	138,9	199,2	1,43	179,1	142,7	232,3	1,63	258,1
Ukrainian SSR	50,0	50,5	1,01	43,8	50,9	77,3	1,52	66,6
Baltic area	8,26	8,3	1,0	8,8	8,5	12,8	1,51	12,8
Trans-Caucasian area	14,4	12,6	0,88	13,0	15,7	23,4	1,49	21,0
Central Asian area	26,5	15,8	0,6	18,5	30,4	39,2	1,29	31,0
Kazakh SSR	15,0	16,2	1,08	6,6	16,2	25,0	1,54	14,0
Belorussian SSR	9,7	12,6	1,3	12,0	10,0	15,3	1,52	14,5
Moldavian SSR	4,0	2,8	0,7	1,2	4,2	6,0	1,43	12,0

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In 1980 the consumption of toilet soap in the Union as a whole was higher than its production. This occured by decreasing its remainders in wholesale and retail trade, and also through purchases abroad.

The production of toilet soap by regions has been entered by production not only at the enterprises of republic ministries, but also at enterprises of union subordination located on the territory of these republics.

From Table 3 it can be seen that the largest per capita consumption of toilet soap in 1980 occured in the RSFSR and Belorussia, and the smallest in Moldavia, the central Asian and Trans-Caucasian areas, and also in the Ukraine and in the Baltic area.

Despite the low per capita consumption of toilet soap in the Ukraine, the Ministry of Food Industry Ukrainian SSR and the Nikolayev "Alyye Parusa" Perfume and Cosmetic Combine did not succeed in providing the population with toilet soap and it was necessary to import 6,700 tons of it into the republic from other areas and from abroad.

Toilet soap, which contains 80-88 percent active substances and 17-18 percent moisture, tolerates transportation over substantial distances. However, during the 11th Five-Year Plan it is planned to bring the production of toilet soap as close as possible to its consumption areas.

In 1981-1985 it is planned to organize the production of toilet soap in three additional republics: Georgia, Moldavia, and Tajikistan.

The growth of toilet soap production capacities in the 11th Five-Year Plan is shown in Table 4.

[See chart on following page]

Table 4

Ministry of Food Industry	1/1/81 capacity, thousands of tons	% of total capacity	1981–1985 capacity increase, thousands of tons	1/1/86 capacity, thousands of tons	% of total capacity
USSR	303,8	100,0	174,7	478,5	100,0
RSFSR	164,3	54,1	45,6	209,8	43,9
Ukrainian SSR	24,5	8,1	43,9	68,4	14,3
Uzbek SSR	14,8	4,9	22,5	37,3	7,8
Kazakh SSR	9,0	3,0	6,0	15,0	3,1
Georgian SSR	-	-	7,5	7,5	1,5
Azerbaijan SSR	7,4	2,4	7,6	15,0	3,1
Lithuania SSR	7,4	2,4	-	7,4	1,6
Moldavian SSR	-	-	15,0	15,0	3,1
Latvian SSR	2,7	0,9	4,8	7,5	1,6
Armenian SSR	7,8	2,6	7,2	15,0	3,1
Estonian SSR	2,0	0,6	-	2,0	0,4
Tajik SSR	-	-	7,5	7,5	1,6
Union Margarine Industry	15,0	4,9	15,0	30,0	6,3
Union Perfume Industry	48,9	16,1	7,1	56,0	11,7

The increase in the toilet soap production capacites will be achieved basically through an expansion, reconstruction, and reequipping of operating enterprises (Table 5).

Table 5

Capacity increase distribution	1981 – 1985	
	Thousands of tons	%
Total increase	174,7	100,0
Through reconstruction and expansion of operating plants	114,7	65,7
Through organization of toilet soap production at new enterprises	60,0	34,3
Through construction of new plants	-	-

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In all, in 1990 32 enterprises will be producing toilet soap. The expansion of capacities will be accompanied by a further concentration of production.

At a number of enterprises (the Gor'kiy Oil and Fat Combine, Shakhtinsk Synthetic Detergents Plant, the Riga "Dzintars" Production Association of the Perfume and Cosmetic Industry, the Irkutsk Oil and Fat Combine, and others) the capacities of the boiling sections and the fat splitting shops have to be brought into correspondence with the basic toilet soap production equipment.

The program which has been worked out for increasing the production of detergents and, first of all, toilet soap is connected with the realization of a complex of engineering and technical and construction and installation operations. In addition to soap-making production itself, it is necessary to increase the capacities of the hydrogenation production and of the toilet soap boiling section, and to expand the separation-glycerin shops, warehouses, and cleaning equipment. There will have to be a substantial increase in the processing of soap stocks:their decomposition, distillation, and the hydrogenation of the distilled fatty acids.

In order to increase the capacities of the soap-making productions and to replace worn out and obsolete equipment, a substantial amount of domestic and imported equipment will have to be installed during the 11th Five-Year Plan. There will be an allocation of 180 million rubles for this work.

The domestic Al-MLT toilet soap production line which has a productivity of four tons per hour and which is accommodated practically on the same area as the operating ELM line will play a large role in the reequipping of enterprises. In 1981 the Al-MLT line will come to the Rostov Oil and Fat Combine and, after final tests, will be put into series production.

In order to increase the capacities for a reactive-free separation of the fats the operating 10-cubic meter autoclaves will continue to be replaced by 20-ton units. A number of enterprises (the Kazan' Chemical Combine imeni M.N. Vakhitov and others) have already gained experience in using these autoclaves.

An improvement of the production of washing agents and an increase in their production cannot be looked at in isolation from an efficient use of raw materials and materials.

The party and the government are constantly calling the attention of the workers of the food industry and other branches to the necessity for strengthening work to decrease the expenditure of food oils and fats for technical purposes, which is one of the aspects of accomplishing the food program.

In recent years soap industry workers have improved the use of soap stocks somewhat and have decreased the expenditure of food fats. Whereas in 1979 134,000 tons of soap stocks were used for the needs of soap-making, in 1980 this figure increased to 147,000 tons. The expenditure of food fats in 1978 came to 169,000 tons, while in 1980 it had decreased to 152,000 tons, or by 17,000 tons.

The USSR Ministry of Food Industry has planned a broad program for the use of fatty waste products in the 11th Five-Year Plan. The following assignments for

the creation of capacities have been established: decomposition of soap stocks--87,500 tons; distillation of the fatty acids 166,500 tons; and hydrogenation of the distilled fatty acids--84,000 tons.

Planning organizations have the responsibility of providing for the creation of units for the hydrogenation of distilled fatty acids at hydrogenation plants which are being constructed and built.

During the current five-year plan it is planned to completely halt the importation of raw unrefined soap stocks from the cotton processing republics.

Soap-making enterprises are now experiencing serious difficulties with packing supplies, but, despite this, many plants have still not shifted over to the use of multiple-use packing within the cities where they are located. It is necessary in the near future to change over everywhere to putting soap in packing containers and trays which operate plant-store scheme.

In 1981-1985 work has to be done at soap-making enterprises to mechanize labor intensive operations and, first of all, the packing, warehousing, and loading of finished output in containers and railroad cars.

A large amount of work is being done in this direction by the collective of the Leningrad Synthetic Detergents Combine imeni Karpov where the mechanization of the packing of open and closed toilet soap is being completed. A substantial number of workers were made free in this section. An automatic unit for packing household soap is being developed.

The most serious attention has to be directed toward preventing environmental pollution. During the 11th Five-Year Plan there should be a universal introduction of the system for the perezhirivaniye of caustics and their subsequent treatment by calcium chloride which was developed by the "Maslozhirprom" scientific production association. The calcium salts which are obtained should be given to combined feed enterprises and enterprises for the production of lubrication greases. It is necessary to universally introduce the experience of the Gor'kiy Oil and Fat Combine in giving caustics to construction enterprises as plasticizers for the production of solutions and concrete.

The "Maslozhirprom" Scientific Production Association and the "Gipropishcheprom-3" Institute, which are supposed to develop regulations and planning estimates and to give concrete assistance to enterprises, have a large role to play in supplying the country's population with washing agents.

There is no doubt that the workers of the soap-making industry will perform the tasks which were advanced by the party at the 26th CPSU Congress.

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PERSONAL INCOME AND SAVINGS

PREDICTION OF POPULATION'S MONETARY SAVINGS EXAMINED

Moscow VOPROSY EKONOMIKl in Russian No 8, Aug 81

[Text] Savings is one of the most important components in the scheme of balancing the money incomes and expenditures of the population. Effective methods for making plan estimates of savings have not yet been devised. In the instructions concerning the methods to be used in the development of state plans for the economic and social development of the USSR, general recommendations are made to the effect that in the determination of the sum total of the increase in deposits for the plan period "it is necessary to analyze the data on the absolute sums of surpluses and the increase in deposits, their correlation with the money incomes of the population and their increases for a number of preceding years, as well as to calculate the economic and organizational factors involved in their growth."[1] Moreover, the answers to a number of questions are missing: how must an analysis of savings be conducted, what must be the correlation between savings and money incomes, what is signified by organizational and economic factors involved in the growth of savings?

All of this impedes the scientifically-based planning of the rapidly-growing money savings of the population.

Let us examine some of the approaches to the analysis and projection of money savings that may find practical application in the work dealing with the composition of the plan balance of money incomes and expenditures of the population. We must keep in mind that the concept of "money savings" encompasses both organized forms of depositing and accumulating money and money kept directly by the population. The organized money savings of the population, in addition to deposits in savings banks, include deposits in the State Bank, accumulations in the system of Gosstrakh [Main Administration of State Insurance] and also in the form of obligations of state loans.

Most readily available for analysis are the money deposits in savings banks, which constitute the most significant part of the accumulations. The mechanism for the formation of this type of savings emanates from the economic nature of money savings, which--irrespective of the forms of deposit, are determined by the demands for future large expenditures.

The basic question which must be solved in the plan estimate of the savings of the population lies in the determination of the level of objectively necessary savings.[2] Their magnitude reflects the conditions of the realization of the

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money incomes of the population that have actually come into being during the given period--conditions which are called forth by the volume and structure of personal demands and the development of the forms and conditions of their satisfaction. One of the main goals of the composition of the plan balance of money incomes and expenditures of the population is to secure complete balance between the effective demand and the supply of goods and services requiring payment. However, in certain stages of the composition of the plan balance of money incomes and expenditures, deviations in the estimate of the increases of the savings of the population from the objectively necessary level are possible. If the growth of savings is less than the objectively necessary growth, this is evidence of the fact that the plan projects insufficient growth of the money income of the population; if it is greater, a part of the increase of savings being planned will be redundant with respect to the actual conditions of the realization of money incomes.

The process of the formation of savings is complex; for this reason, no sufficiently reliable methods for estimating their objectively necessary level have been worked out to date. At the same time, the correct estimate of these processes is exceedingly important. The appearance of surplus savings in one or another stage of the work on the composition of the balance requires a reconsideration of the whole system of money expenditures of the population for goods and services requiring payment, and frequently also of the conditions of the formation of money incomes of the population. An increase in incomes not in agreement with money expenditures, which calls forth the appearance of surplus savings of the population, is an important factor in the destruction of the entire system of conditions making for balanced economic growth.

Providing an increase of savings in the plan period serves as a criterion of the quality of the composition of the balance of money incomes and expenditures of the population. Therefore, it is important to find such methods of planning savings as will allow the revelation of definite tendencies in the formation of money accumulations depending on the objectively conditioned demands of the population for future money expenditures.

The urgency of the solution of these problems is determined by the fact that at the 26th CPSU Congress it was acknowledged "to consider the fuller satisfaction of the demand of the population for various types of goods and services as the most important task."[3]

In the economic literature some approaches to the investigation of savings are known. One of them consists in the study of the functional structure of savings on the basis of an analysis of their goal structure. The general idea of such an approach may be realized by two methods. In the first, the goals of the formation of savings are established in conformity with the primary motives which induce the population to save up money. These motives are revealed through direct questioning of individual families which differ among themselves with regard to income level, socio-demographic characteristics, living conditions, etc. On the basis of the information received the nature of the formation of savings is studied and the quantitative interrelations are established which take shape in this process.

Such research is widely disseminated abroad. Thus, according to the data of an investigation of savers in the FRG in 1969, "families encompassed in the sampling most frequently named the following goals: timely savings for any cases of calamity (48 percent of all responses), old age security (27.1 percent), vacation travel (23.7 percent), acquisition of various kinds of household articles and decorations (20.7 percent), purchase of housing (16.7 percent), securing the future of children (14.3 percent), and others."[4]

In our country, too, population surveys with regard to the study of the goals of saving money have been conducted. For example, in the LaSSR it was determined that in the mid-1970's, out of the total savings accumulated for the purchase of non-food items, 75 percent were designated for the acquisition of automobiles and motorcycles, 12 percent for ready-made clothing, 6 percent for furniture, 5 percent for footwear, 3 percent for street clothes and carpets, and 2 percent for cultural goods.[5]

Such research helps in gaining a deeper understanding of the nature of this process and in developing general hypotheses concerning the distribution of savings in accordance with the goals of their accumulation. However, for the practice of planning such data turn out to be of little use since such information is determined through experts and its representativeness depends in many respects on the sampling of the families surveyed, as well as their desire (or lack of desire) to give a correct answer. The shortcoming that has been noted is manifested in the fact that, as a rule, estimates received as a result of surveys, do not agree with the factual data about the level of savings.

A number of authors propose that the analysis of the goal structure of savings be guided, not by the results of surveys of the population, but by factual data that characterize the expenditures of the population for the acquisition of those kinds of goods whose purchase requires the preliminary accumulation of money. At the basis of such an approach lies the proposition that the economic nature of money savings is mainly determined by the demand for future large expenditures. For this purpose they distinguish the following elements of objectively conditioned savings: For the purchase of consumer durables; for the payment of primary shares for cooperative housing construction and in the organization of associations for gardening; for a personal retirement fund; for a holiday; and other objectively necessary savings.

The quantitative estimate of the individual elements of the goal structure is made on the basis of the data of trade statistics, the statistics of savings banks, the character of the distribution of the families by level of income, and information of budget investigation. Then the dimensions of surplus savings are determined by means of the comparison of the obtained estimate of the objectively necessary level of savings with the factual indicators of the total quantity of savings.

Such an approach to the study of savings is distinguished by great practical direction since it is not only not isolated from real economic conditions determining the formation of the whole structure of the money expenditures of the population, but also makes it possible to regard savings as one of the directions of the use of money incomes. In the same way, it turns out to be possible to corre-

late the process of the formation of savings with the factual conditions of the development of the market for goods and services. However, it is rather difficult to apply the method of estimating the objectively necessary savings through the analysis of the factual expenditures of consumers in practical planning work. This is connected both with the complexity of the calculations themselves and with the limited possibilities of the information base for the determination of the individual elements of the goal structure of savings.

Overcoming the shortcomings inherent in both methods of determining the functional structure of savings on the basis of an analysis of their goal structure is possible, it seems to us, only with the aid of economically significant models based on the processing of real statistical information on the savings of the population. The broadest development of this method is found in the works of N. Rimashevskaya and O. Rogova.[6] The most important premise of the model proposed by them was based on the hypothesis that in conditions of the conformity of demand and supply the correlations of the growth of money incomes and the supply of goods and services become mutually balanced. The dissemination of the tendency of the formation of savings, characteristic for equilibrium conditions in a given period, makes it possible, in the opinion of the authors, to obtain estimates of the objectively inevitable and forced savings for all the remaining years of the time interval being investigated. At the basis of such an approach lies the--in our view, on the whole correct--idea of the necessity of isolating the equilibrium period for the construction of a corresponding model of savings.[7] However, it is difficult to agree with the hypothesis concerning the normality of the conditions of the formation of money savings. Indeed, if we are to be guided by the conception that surplus savings are formed in the case of the excess of the rate of growth of incomes over consumer expenditures, we by the same token artificially underestimate the level of the objectively necessary growth of savings. As is well known, the money incomes of the population are distributed among the following basic channels: Purchase of goods, payment of services, growth of savings, obligatory payments and voluntary payments. In conditions of the systematic growth of money incomes, the relative share of the so-called obligatory payments and voluntary payments regularly increases. If we assume that the expenditures of the population for goods and services increase at the same rate as incomes, the share of increase in savings in the total sum of expenditures must fall.[8] Such a dynamic of the change of savings, it seems to us, does not reflect contemporary conditions of the formation of consumer demand.

During recent years some advance of the growth rate of money savings compared to the rate of growth of incomes has been characteristic. This is explained by the objective demands of the population for the acquisition of housing, automobiles, furniture and other consumer durables, which require the preliminary accumulation of money. More correct, in our view, therefore, is the hypothesis according to which in a given phase the normal tendency is characterized by the conformity of the rate of growth of savings to the rate of growth of money incomes of the population for "expensive goods."[9] This signifies that the forced savings are formed when the growth rates of savings exceed the growth rates of expenditures for large purchases. The utilization of the period of relative convergence of the growth rates of savings and incomes as the base for calculation leads to the overstating of the magnitude of surplus savings. The economic literature contains references to this negative feature of the extrapolation models being employed.[10]

There exists another circumstance which hampers the application of the proposed models for the determination of the functional structure of savings. It has to do with the oversimplified reflection of the real process of the formation of savings. The basic premise of the models being recommended proceeds from the immutability of the very parameters of the model, which, in essence, signifies the immutability of the relations between the dynamic of savings and the factors determining it. At the same time, experience shows that the actual relation between these indicators is modified with time (for example, under the influence of structural changes in the composition of money expenditures).

To take this peculiarity into account, a model may be proposed at the basis of which lies the comparison of the average per capita data on the savings of the population and the factors determining their formation in the individual union republics. Principally new in this model is the fact that, in contrast to the existing models of savings which are based on the processing of time series data, it discloses regional peculiarities which arise in the process of the formation of savings by the population of the various union republics. By the same token it turns out to be possible to enlist new information for the estimation of the conditions of the formation of savings in every concrete year of the period under review.

The possibility of applying inter-republic information for the analysis of the processes of the formation of savings throughout the country as a whole is conditioned by the generality of the mechanism of their formation in the various regions. At the same time, depending on the structure of the purchasing demand of the population, a distinctive correlation between savings and expenditures for goods and services takes shape in every union republic. Since modifications in this correlation are viewed as depending in the main on changes in the purchasing demand, this provides the possibility of estimating the objectively necessary level of savings, the change of which reflects regular processes in the development of demand. The experimental calculations we have carried out, which make it possible to establish the correlation between the growth of savings in deposits and the expenditures of the population for expensive commodities, serve as an example of the practical use of this model.

Annual savings bank deposits of the population of the USSR from 1959-1977 increased ten-fold. The average annual growth rate of per capita deposits for this period came to 14 percent.[11] It is clear that such high rates of accumulation of money savings reflect contemporary peculiarities of the development of the purchasing demand of the population, one of which is the increase in the proportion of expensive commodities. Thus, with a growth of the volume of retail commodity turnover in the USSR for 1959-1977 amounting to 3.2 times the previous figure, the expenditures of the population for large purchases increased 6.3-fold. At the same time, the change in the structure of purchasing demand of the population is not the only reason for such rapid growth of money deposits in savings banks. In recent times there has been an increase in the influence of the correlations taking shape between purchasing demand and the supply of goods and services requiring payment on these processes. A definite idea about the changes in these correlations is provided by the average annual growth rates that have actually developed in the commodity turnover and savings bank deposits on the average per capita of the population. Such a comparison was carried out in three phases: first phase--

1959-1964; second phase--1965-1970; and third phase--1971-1977.

The first and third phases are characterized by average annual growth rates in savings and commodities turnover on the average per capita of the population that are comparatively similar and not very high. In the first phase, these rates came to 7.5 and 5.2 respectively, in the third phase--8.4 and 4.8. Of greatest interest is the second phase, which is characterized by the highest average annual growth rate for the entire period of comparison with respect to deposits in savings banks calculated per capita of the population (24 percent); the average annual rate of growth of commodities turnover for this period amounted to only 7.2 percent.

The primary growth of money savings of the population by comparison with the increase of retail commodities turnover is explained by some economists by the rapid expansion of unsatisfied demand on the part of the population during this phase.[12] We agree with their view that at the basis of this phenomenon lies the lag between the supply of goods and services requiring payment and the mass and wide-scale increase of the money incomes of the population.

The at the time fully justified aspiration to secure increased stimulation of the development of material production by means of accelerating the growth of money incomes found expression in the rather sharp change in the correlations in the growth of wages and labor productivity. Thus, according to our calculations,the correlation between the wages in material production and the productivity of national labor increased by no less than 15 points in the 8th as compared to the 7th Five-Year-Plan. Such a change in the proportion of the growth of wages and labor productivity demanded for the preservation of the balance of demand and supply either corresponding changes in the utilization of the national income in favor of the consumption fund or a relative deceleration of the growth rates of money payments from public consumption funds. However, in actual fact the proportion of the national income used for consumption contracted from 73.7 percent in 1965 to 70.5 percent in 1970.[13] As far as money payments from public consumption funds are concerned, their rates of growth for 1965-1970, according to our estimates, turned out to be 20 points higher than during the preceding five-year-plan. All of this in the final analysis determined the peculiarities of the comparative dynamic of money incomes and expenditures of the population during this period, which have found expression in the phenomena of unsatisfied demand and an increase in the dimensions of surplus savings.

The correctness of such an explanation is supported by the comparisons we made of the growth rates of savings deposits and expenditures of the population for so-called large purchases.

Table 1. Correlation of Average Annual Growth Rates of Per Capita Savings in
Savings Bank Deposits and Expenditures for Large Purchases during
1959-1977 (in Percent)

Growth rates	1959-64	1965-70	1971-77
Average annual growth rate of per capita annual savings in savings bank deposits	7.5	24.2	8.4
Average annual growth rate of large deliveries on the average per capita of the population	11.4	9.9	7.4
Coefficient of correlation between average annual growth rates of savings and large purchases (1:2)	0.7	2.4	1.1

The correlation of the growth rates of savings and expenditures for large pur-
chases is influenced by a number of factors: Change of the goal structure of
savings, the predominance of a concrete goal for the accumulation of money in
every phase; change of the average time periods of the accumulation of savings for
securing certain kinds of expenditures; the development of consumer and money
credits of the population. If these conditions remain unchanged, the correlation
must be close to 1.

In principle one can construct a model which allows for the influence of all the
enumerated factors on the dynamic of the correlation of the growth rates of expen-
ditures for large purchases and savings. Precisely in this case the possibility
would present itself to estimate the volume of surplus savings in the plan period
more objectively.

Of significant interest is the estimation of every factor influencing the above-
cited correlation taken separately. If the goal structure of savings in the plan
period does not change and the average time periods of accumulation remain constant,
an approximate estimate of objectively necessary savings may be obtained which may
be used in the phase of the preliminary substantiation of the largest elements of
the plan balance of money incomes and expenditures of the population for the five-
year-plan. Such a possibility appears in connection with the fact that for the
extent of the five-year-plan period the goal structure of savings and the average
time periods of accumulation cannot change sharply. Moreover, the natural basis
for the determination of the dimensions of the objectively necessary growth of
savings in the plan period is the study of the statistical regularities which char-
acterize the process of the formation of savings in the pre-plan period.

In order to present in what way the necessary growth of savings in the plan period
can be calculated, we will cite the example of the use of the corresponding model
for estimating the dynamic of savings in the past periods. Let us suppose that it
is necessary to estimate the character of the movement of objectively necessary
savings by the periods 1965-1970 and 1971-1977. In 1971-1977 the correlation of
the growth rates of savings and large purchases was close to 1, but in 1965-1970
savings increased at a significantly faster rate. If we consider that the pro-
cesses relative to the movement of savings and expenditures in the first case were
close to "normal", then, going in reverse manner, we can determine the extent of
the breakdown of the indicated proportions in 1965-1970. From this we can obtain

an estimate of the surplus growth of the savings of the population (with respect to the increase of large expenditures).

Utilizing the hypothesis concerning the "normal" relative movement of expenditures and savings in 1971-1977, we can construct a model for estimating surplus savings in 1965-1970 with the aid of the method of inter-republic comparisons. The general scheme for the formation of such a model may look as follows.

The first stage of the calculations, connected with the processing of data about the savings in a regional cut, consists in a regression analysis of the influence of a number of variables on change in the growth of savings for every year of the period 1971-1977. Here the average per capita volume of growth in savings bank deposits in the cut of the union republics appeared as the independent variable. Their change was fixed depending on the level of the accumulation of personal property of the population, the number of pensioners (calculated per 100 inhabitants), the average per capita magnitude of commodities turnover and its growth. In the final calculation the equation of the regressions proved to be sufficiently acceptable, reflecting the change of the average per capita growth of savings as a function of the magnitude of commodities turnover (x_1) or its growth (x_2) also on the average per capita of the population. A collection of equations was obtained, characterizing the change in the growth of savings as a function of the indicated factors. Further, the parameters of the equations of regression were equated as a function of time, characterizing the dynamic of savings as a function of the growth of commodities turnover.

Using the relations obtained, we can construct an equation of regression which reflects the change in the level of the objectively inevitable savings for the period under review as a function of the growth of commodities turnover:

$$S_t = 19.93 + 0.885t + (0.0651 + 0.0011) \cdot x_1(t), \qquad (1)$$

where S_t is the objectively necessary level of annual increases of savings per capita of the population in t year; x_1 is the commodities turnover per capita of the population in t year.

Substituting in the given equation the corresponding value and $x_1(t)$, we can estimate the savings that have been formed as the result of the disturbance of the conformity of demand to supply from 1965 to 1970. Their magnitude can be obtained as the sum of the differences between actually developed magnitudes of annual savings and objectively inevitable increases in deposits.

However, in calculations of that type we separated ourselves from the fact that disturbances in the conformity of demand and supply also occurred beyond the limits of the period under review (1965-1970). Undoubtedly, equilibrium periods, too, are characterized by the disturbance of the conformity of demand and supply and the formation of surplus savings. In particular, the fact is evident that the absolute average annual sums of the growth of surplus savings in 1971-1977 were not smaller than in 1965-1970 and were called forth to a significant extent by the disturbance in the proportions of the growth of savings and expenditures precisely in 1965-1970. Consequently, the establishment of normal analogous proportions in 1971-1977 testifies only to the stabilization of the intensity of the formation of surplus

savings during these years. The exposure of the indicated savings also represents an important task in connection with which it was required to estimate the upper limit of the aggregate unsatisfied demand as a whole for the years 1959-1977. The goal of these calculations is the estimate of the magnitude of the unsatisfied demand which could arise in the "equilibrium" period of 1971-1977.[14] On the basis of data characterizing the dynamic of annual increases in the deposits of the population and money expenditures for large purchases during 1971-1977, it was established that in 1972 the greatest growth of large purchases in the course of this period occurred at 1 ruble of growth in savings:

Table 2. Growth in Large Purchases, 1971-1977

Item	1971	1972	1973	1974	1975	1976	1977
Absolute growth of large purchases per ruble of growth in deposits	0.12	0.14	0.08	0.10	0.11	0.13	0.13

The fact that in 1972--from the standpoint of the correlation of increases in deposits and expenditures for large purchases--most favorable conditions developed for the formation of savings of the population for the entire "equilibrium period" of 1971-1977 is evidenced by the analysis of the growth rates of savings as a function of the distribution of large purchases by union republics. Precisely because of this the equation of regression fixing the level of the formation of savings in 1972 was put at the basis of further calculations. Here we must proceed from the fact that the conditions in 1972 best of all correspond to the hypothesis of the formation of the objectively necessary level of savings for the entire period.

The selection of functions which describe the change in the level of deposits in 1972 as a function of selected factors was carried out proceeding from standard criteria. Most acceptable proved to be the linear form of regression equation $(y = a_0 + a_1 x_1 + a_2 x_2)$:

$$S_{1972} = -20,07 + 0,0485 x_1 + 0,3950 x_2, \qquad (2)$$

where S is the growth of deposits in savings banks per capita of the population; x_1 is the retail commodities turnover per capita of the population; and x_2 is the growth of retail commodities turnover per capita of the population.

This equation has statistical meaning in the presence of K determination--0.818; d Durbin-Watson statistic--1.9. According to the coefficient of determination the variables being used--the average per capita volume of commodities turnover and its growth for the year--make it possible to explain more than 80 percent of all changes in the growth of savings. Moreover, the accounting values of the growth of savings, obtained with the aid of the indicated equations, differ insignificantly from those which actually developed in 1972. The deviation amounts to approximately 10 percent of the actual magnitude of the growth of savings in this year. For further calculations it was required to correct the regression equation obtained so as to eliminate this inevitable difference in the calculations as well. Such a correction was made with the aid of a more precise definition of the parameter α_0, . which, in our view, catches the influence of all other factors not taken into

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account. As a result of the indicated correction, new characteristics of the re-
gression equation for the selected year were obtained:

$$S^*_{1972} = -22.31 + 0.0485x_1 + 0.3950x_2. \qquad (3)$$

Further, substituting in the equation obtained the value of the annual commodities
turnover and its growth for the individual years of the period under review, we can
obtain the value of the level of the objectively necessary savings, with respect to
the conditions of the supply of goods, for 1971-1977. By means of comparing the
entire sum of the growth of savings and its objectively necessary level, the esti-
mate of surplus savings is determined.

The method of calculations being proposed makes it possible to estimate the limits
of those parts of money accumulations which are formed as the consequence of the
rise of unsatisfied demand. The indicated methods can be employed for the substan-
tiation of plans of retail commodities turnover in the elaboration of the balances
of money incomes and expenditures of the population. With its aid we can determine
with sufficient precision what savings the population must possess so as to secure
the normal process of the acquisition of large purchases, and also estimate surplus
savings. This creates the basis for the elaboration of the corresponding plan
measures that prevent the formation of savings of that type and opens up the pos-
sibility of plan, more precisely a prognosis, estimate of both the normal tenden-
cies in the change of savings and the undesirable phenomena in their formation.

The problem of the prediction of the objectively necessary level of money savings
in the plan period, especially in the long-term perspective, in the final analysis
comes down to the elucidation of the reasons determining the rates of their growth.
As is well known, in recent years we have observed an important advance of the
growth rates of money savings of the population as compared to the growth rates of
its incomes and also commodities turnover and services requiring payment. Some re-
searchers explain such a phenomenon basically by the changes in the distribution of
the population with respect to the level of average per capita incomes.[15] To leave
the influence of this factor out of one's consideration is impossible, but to reduce
the reasons for the rapid growth of savings only to the impact of this factor is
not entirely correct. Such a rapid growth of savings is also linked with the opera-
tion of a number of other reasons, calling forth, in particular, the appearance of
unsatisfied demand and, as a consequence, surplus savings. We are in agreement
with Yu. Kashin, who proposes that the accelerated growth of money savings has its
explanation above all in the fact that "in groups with higher incomes a large gap
simply develops between the effective demand of the population and the possibili-
ties for its satisfaction."[16] This conclusion agrees with the data of surveys con-
ducted in the Estonian branch of the VNIIKS [All-Union Scientific Research Insti-
tute for the Study of the Demand of the Population for Consumer Goods and the
Market Conditions of Trade], which showed that large deposits are growing most
rapidly. In our view, this phenomenon is linked with the circumstance that in the
contemporary period of economic development the production of consumer goods is,
·first of all, oriented towards the satisfection of the demands of the mass consumer
with average incomes. Therefore, the creation of conditions for the most effective
realization of money means with respect to the more well-to-do groups of the popu-
lation may serve as an important factor limiting the growth of forced savings.

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It must be underscored that the growth of forced savings in groups with relatively high incomes takes place in conditions of the general imbalance between the growth of money incomes of the population and the supply of goods and services. Therefore, most important for the elimination of the reasons for the increase in forced savings is the securing, in the next five-year-plans, of the more rapid growth of commodities turnover and services requiring payment by comparison with money incomes. Within the framework of improving the total proportions of demand and supply, a more flexible policy with respect to product assortment is necessary in regard to the supply of goods, a policy oriented toward the demands of individual groups of the population. Besides this, a more active role in the establishment of the proportions of demand and supply must be set aside for the system of retail prices.

The overcoming of the phenomena which are conducive to the rise of unsatisfied demand will secure the completion of the formation of a living standard, in the presence of which the growth rates of the incomes of the population and the increases in commodities turnover must inevitably come closer.

Using the function of the determination of normal savings obtained above and proceeding from the assumptions that the share of the expenditures of the population for articles in the personal consumption fund does not change in the long term, the growth rate of the money incomes of the population (personal consumption fund) remains constant in the period being predicted. For the determination of the prognostic magnitude of retail commodities turnover we can deduce the formula:

$$x_1(t) = \alpha \, \text{Д}_0 (1 + \beta)^t, \qquad\qquad (4)$$

where α is the share of commodities turnover in the personal consumption fund;

Д_0 is the personal consumption fund in the base year per capita of the population;

β is the average annual growth rate of the personal consumption fund.

Having substituted expression (4) in the formula (2), we can calculate prognostic estimates of the growth of savings in the long-term period. They are characterized by the fact that with the reduction of the average annual growth rates of savings their share in the total money incomes of the population will grow, although at a slower pace than in recent times. The results obtained agree with the conclusions of other authors to the effect that the process of the formation of a balanced structure of money incomes is not completed. Apparently, for a rather long time to come, the development of the demand of the population of the USSR will call forth such structural changes in the growing money expenditures as inevitably cause in them an increase in the share of annual increases in savings. The method presented for the estimation of objectively inevitable and forced (surplus) savings may be used in the substantiation of the hypothesis of the formation of the structure of the money incomes of the population in a long-term period.

The increase in the preciseness of analytical and prognostic calculations will be enhanced, above all, by the log point in the dynamic of savings and large purchases. Indeed, the growth of savings in a concrete year is linked to the increase in the volume of expensive purchases in the future, removed from the given year by a period which is equal to the average length of the accumulation of savings. The

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correlation of the increases in the savings of the population in deposits and ex-
penditures for large purchases with the calculation of the log point, being esti-
mated for 1965-1970 as 2 years and for 1971-1977 as 3 years, are shown in Table 4.
Moreover, it is possible to take into account the change in the structure of the
growth of savings with respect to the goals of accumulation and the estimation of
the average period of accumulation for large expenditures in the accounting and the
plan periods. It is expedient to take into account other expenditures of the popu-
lation requiring the formation of savings, first of all investment expenditures.

Table 4. Correlation of Average Annual Growth Rates of Average Per Capita Savings
in Savings Bank Deposits and Expenditures for Large Purchases in 1959-1977
with Calculation of the Log

Item	1959-64	1961-66	1965-70	1967-72	1971-77	1974-80
Average annual growth rate of average per capita annual savings in savings bank deposits	7.5		24.2		8.4	
Average annual growth rate of large purchases on the average per capita of the population		7.2		11.2		7.3
Coefficient of correlation of average annual growth rates of savings and large purchases		1.0		2.2	1.2	

Possibilities for the further increase in the preciseness of prognostic calculations
of the growth in savings of the population, corresponding to a balanced state of the
proportions of demand and supply, are seen in the combination of the study of the
statistical regularities of the process of the movement of savings on the basis of
regional data with the regularities of measurement in time and in cross-section of
individual income groups of the population. The latter may be realized with the aid
of models of the type of a differentiated balance of incomes and demand. Through
such a model, the movement of savings would be estimated not only in correlation
with expenditures for which they are formed, but also, proceeding from a change in
the distribution of the population, with respect to the level of incomes and specif-
ic regularities of the consumer demand behavior of groups with different levels of
income.

FOOTNOTES

1. "Metodicheskiye ukazaniya k razrabotke gosudarstvennykh planov ekonomicheskogo
   i sotsial'nogo razvitiya SSSR" [Method Instructions for the Elaboration of
   State Plans for the Economic and Social Development of the USSR], Izdatel'stvo
   "Ekonomika", 1980, p 653.

2. The classification of savings according to a functional and goal structure was

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developed by a number of authors. In its most complete form, it is presented in the articles of V. Orlov and A. Shokhin, "Nekotorye metodologicheskiye voprosy issledovaniya denezhnykh dokhodov naseleniya" [Some Methodological Questions of Research Into the Money Incomes of the Population], IZVESTIYA AN SSSR. SERIYA EKONOMICHESKAYA", No 5, 1976, B. Rakitskiy, V. Orlov, A. Shokhin, and O. Oleynikova, "Napravleniya i formy sovershenstvovaniya pereraspredelitel'nykh otnosheniy" [Directions and Forms of the Perfection of Redistributing Relations], (sb. [Collection] "Problemy povysheniya narodnogo blagosostoyaniya i sotsial'nogo razvitiya" [Problems of Increasing the National Welfare and Social Development], Moscow, 1978.

3. "Materialy XXVI s"ezda KPSS" [Materials on the 26th CPSU Congress], Politizdat, 1981, p 176.

4. See V. P. Fedorov, "Lichnoye potrebleniye v FRG: sotsial'naya differentsiatsiya, dinamika, struktura" [Personal Demand in the FRG: Social Differentiation, Dynamic and Structure], Izdatel'stvo "Nauka", 1974, p 168.

5. See "Tezisy dokladov Mezhrepublikanskoy nauchnoy konferentsii po 'Problemam povysheniya blagosostayaniya naroda i izucheniya potrebitel'skogo sproca naseleniya" [Theses of Papers Delivered at the Inter-Republic Scientific Conference on 'Problems of Increasing the Well-Being of the People and the Study of Consumer Demand of the Population], Riga, 1975, p 34.

6. See N. M. Rimashevskaya and O. L. Rogova, "Metologicheskiye voprosy issledovaniya sberezheniy naseleniya" [Methodological questions of Research on the Savings of the Population], EKONOMIKA I MATEMATICHESKIYE METODY, 1974, Vol X, vyp. 5; O. L. Rogova, "Denezhnoye obrashcheniye i kratkosrochnyy kredit" [Money Circulation and Short-Term Credit], Izdatel'stvo "Finansy", 1978.

7. In developed form, this idea presupposes not simply the finding of the equilibrium period, but the determination of the objective conditions for the formation of necessary dimensions of savings in various periods.

8. In the economic literature there exists another point of view, which is close to this one, on the objectivity of the tendencies of the formation of savings. Here, for example, is what A. N. Voronov writes apropos of this: "One can suppose that in conditions of complete correspondence between demand and supply the growth of savings must proceed at the rate of the growth of the money income of the population. If the growth of savings outstrips the growth of money income, this excess must be considered the result of unsatisfied demand." (A. N. Voronov, "Metody opredeleniya obshchego ob"ema sprosa naseleniya na tovary" [Methods of the Determination of the Total Volume of Demand by the Population for Goods], Moscow, Zaochnyy institut sovetskoy torgovli, 1975, p 56.

9. "Expensive commodities" or "large purchases" are articles, the acquisition of which requires the preliminary accumulation of money for a number of years.

10. See, for example, the above-mentioned work by B. Rakitskiy and others.

11. All calculations in this article were made on the basis of data found in the statistical yearbooks "Narodnoye khozyaystvo SSSR" [The National Economy of the USSR] for 1961-1977. Here and in what follows we are speaking of the annual increases in deposits, which were determined as the differences between the average annual levels of the deposits.

12. See V. A. Volkonskiy, Yu. P. Solov'ev, I. V. Semenova, "Voprosy modeliro-vaniya denezhnykh sberezheniy naseleniya" [Questions of the Modelling of the Money Savings of the Population], EKONOMIKA I MATEMATICHESKIYE METODY, Vol XII, vyp. 3, 1976.

13. The data are taken from "Statisticheskiy Yezhegodnik stran-chlenov Soveta Ekonomicheskogo Vzaimopomoshchi, 1979" [Statistical Yearbook of the Member Countries of the Council on Mutual Economic Assistance], Moscow, 1979, p 48.

14. Excluded from the examination was the first "equilibrium" period (1959-1964), since during these years the formation of surplus savings was insignificant.

15. See G. V. Kaganov, "Nekotoryye voprosy analiza denezhnykh sberezheniy" [Some Questions of the Analysis of Money Savings], DEN'GI I KREDIT, No 7, 1973.

16. Yu. I. Kashin, "Sberezheniya naseleniya v SSSR" [Savings of the Population of the USSR], Izdatel'stvo "Finansy", 1979, p 58.

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