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The Second Economy and the Destabilizing Effect of its Growth on the State Economy in the Soviet Union: 1965-1989

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INTRODUCTION[1]

This study is focused on the second economy[2] in the Soviet household sector and its links to the official state economy.

The paper examines the relationships between per capita legal money income and such income-dependent variables as per capita savings, and purchases of various goods and services in state trade in a large number of regions in Russia and Ukraine in the period between 1965 and 1989. The relationships display, not unexpectedly, a high degree of correspondence between income and most dependent variables in the 1965-1970 period.[3] In this regard the Soviet household sector's income-expenditures behavior was similar to that of other economies, centrally-planned and market. The interesting phenomenon is that after the starting years of our study, 1965 for Russia and 1970 for Ukraine, and virtually without exception the close degree of correlation measured by simple cross-sectional regression analysis begins to get weaker and weaker and almost disappears by the end of 1980s. We speculate that the most likely explanation of this phenomenon is the emergence and rapid growth of the second economy. We view the process as follows. Legal state income and transfers to households would be increasingly supplemented by illegal second economy earnings. At the same time patterns of purchases of goods and services through state channels would be increasingly distorted by expanding alternatives available in private or black markets. And, it should be noted, opportunities for earning second economy income and the need to move to alternative markets would vary among households. Thus, some

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[1] An earlier version of this paper was read at the annual convention of the American Association for Advancement of Slavic Studies, Honolulu, November 1993. The authors wish to thank Dr. Misha Belkindas for his comments and suggestions.

[2] We use the definition of the second economy in the USSR proposed by Professor Grossman. According to this definition, "the second economy comprises all production and exchange activity that fulfills at least one of the two following tests: (a) being directly for private gain; (b) being in some significant respect in knowing contravention of existing law." (Grossman, 1977, p. 25.) The classic papers on the topic of the Soviet second economy are Grossman (1977, 1979).

[3] The evidence derived from a different set of data stronly suggests that the high degree of correspondence between income and expenditures on basic foods had existed in Russia as far back as 1957 (See Appendix C).

households would enjoy higher incomes without having to pay second economy markups on goods they buy while some would suffer from a decline in their real income caused by higher black market prices without having additional second economy income. The rapid spread of the second economy, therefore, would explain how the orderly and "balanced" relations between income and material flows became gradually disjointed and "unbalanced" as long as planners and economic administrators neglected to take second economy activities into account.[4] We could also speculate that if this was true the emergence and rapid growth of the second economy since mid-1960s contributed to the deepening economic crisis of the late 1980s and the ultimate disintegration of the Soviet economy.

The study is exclusively based on official Soviet statistics covering only legal or state disorder money flows, particularly on data on legal money incomes broken down by regions which became available recently and our conclusions with respect to the second economy phenomenon are drawn indirectly. The method employed by us can be thus likened to the method used by an astronomer who seeks to discover the existence and trajectories of unseen heavenly bodies by studying perturbations and peculiar behavior of visible ones.

The second economy phenomenon in the Soviet Union has been studied extensively in the West in the last 20 years or so and much was learned about its specific markets, institutions, products, and mechanisms as well as about the overall magnitude of private incomes and employment (Grossman, 1990). There is no doubt that by the late 1970s, the Soviet second economy had grown to be fairly large relative to the first or the official economy. Professor Grossman has estimated that in the late 1970s, private income comprised between 28 and 33 percent of total household income (Grossman, 1987). One of the authors of this study complemented Grossman's income figures by estimating that the second economy employed between 10 and 12 percent of the total labor force (Treml, 1992). These

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[4] "Annual money income and expenditure balances of the population" from which our income data were taken has been one of the key Soviet documents in planning and administering the household sector. These statistics have been used by Gosbank in preparation of cash flow plans, by Gosplan and Ministries of Finance and Domestic Trade in planning retail trade turnover and deliveries, and by other agencies controlling incomes and expenditures of the population. Until the early 1990s both the planning and ex post "balances" were classified (Boyarskii et al., 1986, pp. 20-21; Garbuzov et al., eds, 1984, pp. 69-70; Nazarov, ed. 1982, p. 518-519).

and similar estimates, however, must be taken as first approximations because they depend to a large extent on specific assumptions and statistical weights employed in normalization. The veil of secrecy surrounding second economy activities (most of which being illegal) is an important but not the only explanation of the difficulty of arriving at accurate figures. An equally important factor is that so far there has been no consensus as to statistical conventions, classifications, and accounting rules applicable to second economy phenomena.

Unfortunately, Western studies (and the available Soviet studies discussed below) have failed so far to arrive at any conclusions on two rather important and interrelated aspects of the second economy: the first is the dynamics of second economy over the last 20-25 years, and the second is the impact of the second economy on the overall performance and allocative efficiency of the "first," i.e., the state economy. The greatest difficulty with tracing the dynamics of the second economy has been the lack of reliable and consistent time series aggregate data.

The three major surveys of emigrants from the USSR conducted in recent years cover different time periods, are not directly comparable, and have a number of possible biases.[5] From these surveys we have learned a great deal about household budgets, regional differences, consumer behavior, housing conditions, employment environment and the like. Unfortunately, these surveys yielded little useful data related to intertemporal changes in private incomes and expenditures. Moreover, only the Berkeley-Duke survey focused explicitly on second economy activities.[6]

The second economy may be large relative to the official state economy but without having some idea of rates of growth of the two it would be difficult to discuss the interaction

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[5] For the survey conducted in Israel see Ofer and Vinokur (1991). Millar (1987) offers a detailed summary of results of the so-called SIP survey.

[6] The Berkeley-Duke household budget survey covered 1061 households with 2963 individuals who emigrated from different urban regions of the USSR, the largest city subsamples being from Erevan (191 households) and Leningrad (303 households). Central Asian republics were not covered except from a small group of households from Uzbekistan. Households reported on their incomes and expenditures during their "last normal year" in the Soviet Union. The overwhelming majority of responses pertained to the period between 1976 and 1981. The survey paid particular attention to the second economy activities of Soviet households both as producers and consumers. Most studies based on the emigre survey and other sources have been published in BERKELEY-DUKE OCCASIONAL PAPERS ON THE SECOND ECONOMY IN THE USSR series of which 36 issues have appeared so far. Professors Alexeev, Grossman, and Treml served as the principal investigators of the project.

between them and the consequences of this interaction. Suppose, for the sake of argument, that the second economy has always been a relatively large and a constant component of the overall Soviet economy or that its share varied within a narrow range. Then we would have to conclude that over time the two economies have developed a certain modus vivendi allowing them to coexist without overt conflict or even to support and complement each other. If, on the other hand, the shares of the two economies in the total have been changing over time we would infer some alteration in relations which could be of antagonistic or benign nature.

The growth of the second economy is not the only factor affecting the relationships between household incomes and such dependant variables as savings and purchases of different goods and services. During the period examined in this study, i.e., 1965 to 1989, a large number of micro and macro economic, demographic, social, and regulatory changes have taken place in the Soviet Union all or some of which could have influenced these relationships.

Let us consider savings. The two basic forms of savings accounts in the Soviet Union were named accounts and bearer accounts ("schet na predstavitelya") and the latter, because of its anonymity, have always been favored by second economy entrepreneurs. Gosbank essentially obliterated the anonymity in 1978 by instructing savings banks to allow fund withdrawal only upon presentation of passports (Gosbank, 1981, p. 79). A study of savings in one oblast showed that both the number and the average size of bearer accounts' deposits were drastically cut following the change of regulations (Anurin, 1988, p. 54). We could have thus expected that the relationship between household legal incomes and bank savings would have undergone some changes around 1978; in fact, one could argue that a partial removal of funds earned in the second economy from savings accounts would have strengthened the correlation between income and savings as measured in our study.

We could cite many other examples of developments which could have and probably did affect income and expenditures relationships in the 1965-1989 period in the positive or negative direction. In some cases, of course, the effects of these changes could have cancel each other. The continuing deterioration of the strength of these relationships as measured by

R^2 clearly suggests the presence of a single major factor which dominated the developments in this period, and which we identify as the growth of the second economy.

Some caveats are in order at this point. This study focuses exclusively on income and expenditures within the household sector. The second economy, needless to say, permeates the state sector and affects and distorts relations among state producers, but these effects are outside the scope of this study.

Since we are using cross-sectional data it is important to note at this point that all Western studies and anecdotal evidence from Soviet sources strongly suggest distinctly different regional patterns of second economy activities and transactions. Both in terms of ruble value and frequency of occurrences of transaction and in terms of labor inputs the second economy was more conspicuous in the South (Armenia, Georgia, Azerbaidzhan, and Central Asia), less so in the West and the North (Russia, Ukraine, Byelorussia, and Moldavia), and marginally lower in the Baltics (see for example Grossman, 1979 and 1987). The present study, on the other hand, is focused exclusively on Russia and the Ukraine, i.e., regions with a relatively lower level of per capita second economy activities. It would thus be reasonable to argue that were the necessary statistical data available for the South and other regions of the USSR the findings would be even more striking.

The study is organized as follows. The next section examines the relatively recent recognition of the existence of the second economy by Soviet authorities and their reaction (or, actually, non-reaction) to it. Section 3 analyzes the available official statistics and discusses the method used by us of linking these statistics to the analysis of the dynamics of the second economy. Section 4 addresses the implications of the growth of the second economy for the efficiency of the Soviet economy. Detailed statistical data, notes, and documentation are covered in three appendixes. A bibliography of Western and Soviet sources completes the study.

RECOGNITION OF EXISTENCE OF THE SECOND ECONOMY BY SOVIET AUTHORITIES

Soviet economists and statistical and planning agencies and research institutes were late in recognizing that the second economy was a unique component of the national economy and not just a mere aggregate of economic crimes. Some individual economists have been researching various second economy phenomena since the mid 1970s, but published studies lack documentation and the necessary definitional, classificational and methodological notes.[7]

Tatiana Koriagina, one of the more visible Soviet specialist in issues related to the "shadow economy," published a number of papers and articles in newspapers and academic journals starting in the early 1980s. But as with other Soviet writings her contributions are poorly documented and often contradictory and are closer to "economic journalism" than scholarly research. In several of her papers Koriagina reported her estimates of the overall magnitude of the second economy which grew from approximately 5 billion rubles in the early 1960s to 90 billion rubles in the late 1980s. However, she concedes the approximate nature of her estimates, reporting that the figures for the early 1990 ranged from a low of 20-25 to a high of 150 billion rubles; the increase from the early 1960s thus ranged from four-fold to 30-fold.[8] Koriagina's estimates of the number of people engaged in the second economy was something less than 8 million in the early 1960s to about 30 million in 1989. The much slower three-fold growth of the labor input compared to the growth in rubles is puzzling unless we are willing to accept the notion of an extremely rapid increase in the rate of remuneration.

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[7]Valeriy Rutgaizer, one of the earlier Soviet economists to recognize the importance of the second economy and to initiate research, published a useful summary of Soviet studies in English (Rutgaizer, 1992).

[8] In order to suggest some order of magnitude we may note that Soviet national income (Net Material Product) in current prices increased from 145 billion rubles in 1960 to 701 billion rubles in 1990. Estimates of second economy income made by Koriagina or others cannot be directly compared to official national income. There is large number of complex accounting issues which we cannot cover here. For example, a large share of second economy income is generated in the service sector but services are not counted in Soviet national income accounts.

Official Soviet statistical agencies did not offer more coherent figures and, in fact, only added to the general confusion. The first recognition of the existence of the second economy in the USSR appeared in a 1989 Goskomstat statistical compendium. According to this sources the "unearned income of the population" (which was apparently equated with the second economy) grew from 3 billion rubles in 1975 to 5.1 billion in 1986 (Goskomstat SSSR, SOTSIAL'NOYE... 1989, p. 99). One year later a similar compendium reported "selected categories of illegal income" for 1989 as 56.5 billion rubles but it was not clear whether second economy incomes increased so rapidly between 1986 and 1989, or whether definitions and the coverage of private activities and transactions had changed between the first and the second report (Goskomstat SSSR, SOTSIAL'NOYE ... 1990, p. 121). The upward revision of second economy estimates continued unabated -- the next year compendium revised the 1989 estimate from 56.5 to 59 billion rubles and reported the 1990 figure as 68.8 billion rubles (Goskomstat SSSR, SOTSIAL'NOYE RAZVITIYE... 1991, p. 127). The latter figure was almost immediately revised upward to 99.8 billion (Goskomstat SSSR, PRESS-VYPUSK, 1991, p. 1). Official Goskomstat SSSR sources while giving more detailed breakdowns of total "illegal incomes" have not, however, offered definitions of various categories or explanations of how the estimates were made.[9]

It can thus be concluded that Soviet sources while offering a rich diet of anecdotal material and some interesting but often ambiguous quantitative references cannot be used to close the gap in our understanding of the record of growth of second economy in the USSR.

Soviet sources on the second economy were equally sparse in the analysis of the interaction between the second and the first economies and the overall impact of the former.[10]

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[9] Professor Treml interviewed a number of Goskomstat SSSR officials concerning second economy estimates and was given some internal experimental methodological documents. One reason for the confusion with estimates published in Goskomstat compendia lies with the sources of statistics -- Goskomstat made only a few estimates of specific illegal activities relying on a group of academic institutes and law enforcement and financial agencies for the rest. In each case definitions and methodology of estimation seemed to have been different.

[10] Some economists (e.g. Tatiana Koriagina mentioned above) roughly estimated tax losses produced by the concealment of productive activities but did not go beyond these estimates.

The consensus among Soviet scholars was that the second economy (under which they almost invariably understood both illegal private economic endeavors and purely criminal activities) had an adverse impact on the official state economy because of its corrupting influences, generation of "unearned" and "illegal" incomes and by creating conditions conducive to emergence of organized crime. And, while they clearly perceived the causal relationship between shortages of state-produced consumer goods, state-fixed low prices, and the resulting activities of "speculators," they did not suggest (at least not openly) that without the "speculators" the state distribution system would have operated at an even lower level of efficiency. It can also be said that most Soviet commentators and policy makers going back to Lenin in the 1920s traditionally attributed more sinister significance to black markets than warranted by the historical record or theory. The "speculators," according to the prevalent view, were not mere middlemen benefitting from arbitrage made possible by excess demand but active agents creating artificial shortages by cornering markets, destroying or hoarding goods, and by other monopolistic strategies. Needless to say, this view of black markets was self-serving as it transferred the blame for consumer goods' shortages from state bureaucrats to private entrepreneurs.

A comprehensive analysis of Soviet official attitudes towards private economic activities is beyond the scope of this paper. Even the most perceptive economists of the Gorbachev era such as Shatalin, Petrakov, Yasin, and Men'shikov, to name just a few, in their analysis of the deepening economic crisis of the late 1980s referred vaguely to growing "imbalances" which plagued the system without explicitly identifying economic forces producing these imbalances.[11]

The most analytically positive was Shatalin's "Five-Hundred Days" program which emphasized the size and the importance of the second economy. The Program stated that "the

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[11] In a tantalizing but undocumented paragraph, Stanislav Men'shikov refers to an econometric model of the Soviet economy he constructed in the early 1970s in Novosibirsk. The model "... helped to identify the presence of black holes in, among other areas, balances of money income and expenditures of the population ... which could be explained by the existence of a large illegal shadow economy." According to the author, the work on the model was disapproved by the then director of the institute, Abel Aganbegyan. But the author contradicts himself. Later in the book Men'shikov notes that "during Brezhnev's years the growth of underground business proceeded gradually and without surfacing too much" and its growth accelerated only during the years of *perestroika*. (Men'shikov, 1990, pp. 4-5, p. 191).

logic of transition to markets presupposes the utilization of 'shadow' capital in the interest of all people" and described the second economy as an important factor in the resource support of reforms. The authors of the program expected that as much as 90 percent of second economy activities would be absorbed by emerging free markets (Shatalin et al., 1990, pp 124-127).

The complete failure to understand the nature and origins of the second economy and to formulate appropriate policy recommendations could be illustrated by May, 1991, deliberations at the Secretariat of the Central Committee, CPSU, focused on the "shadow economy." Alarming reports on the spread of economic crime were delivered by the head of KGB, Vladimir Kryuchkov, the head of MVD, Boris Pugo, and the Prosecutor General of the USSR, Nikolay Trubin. All second economy phenomena were lumped together as criminal ("economic banditry and mafias") resulting from "violations of economic links, the ruin of consumers markets, attempts of local authorities to administer the markets by noneconomic methods, breaches of deliveries and distribution of consumer goods, and creation of artificial deficits." It is clear from the tone of deliberations that most speakers blamed the rapid spread of the second economy on "perestroika." Policy recommendations discussed at the session was the familiar party drivel -- greater involvement of the Party cadres in the struggle against economic crimes, cooperation with local authorities, and a more forceful promotion of the "party line" with law enforcement agencies were called for ("Protiv...", 1991, p. 2).

In summary we will thus note that for a long time Soviet authorities did not identify or study the second economy; after the presence of large-scale second economy activities was recognized it was viewed as consisting of separate and unrelated phenomena to be controlled by law enforcement agencies and state regulations and not requiring reforms or changes in existing state institutions and economic policies.

LINKING THE FIRST AND THE SECOND ECONOMIES THROUGH OFFICIAL STATISTICS

Certain relationships among economic variables presumably exist in an economic system, whatever its type. For example, savings and consumption should be highly correlated with consumer income in the Soviet as in any other economy, all the more so, since consumer behavior was not explicitly planned even in the USSR.

Of course, in order to establish these relationships one has to measure the relevant variables appropriately. For instance, savings in the state owned savings institutions did not represent the entire monetary savings of the Soviet consumers. At least part of these savings were held in the form of cash, "under mattresses" or, as they say in Russia, "in a *kubyshka*."[12] Similarly, officially recorded income and officially recorded consumption of various goods and services did not adequately reflect the corresponding actual values. Presumably, the less accurately income and other variables are measured, the weaker is the observed relationship between income and these variables.

Using simple linear regressions on cross-sectional data from Russian and Ukrainian regions we evaluated the degree of linear dependency between income and savings, income and retail trade turnover, and income and sales of various goods in state trade. We discovered that R^2 of these regressions has been declining over time (see Table 1 and Diagrams 1-7). In other words, cross-sectional regressions for later years generally had significantly lower R^2 than the corresponding regressions for earlier years. We will argue that this decline reflects the growth of the second economy in the USSR.

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[12]We can assume, however, that most Soviet households had a preference for keeping their liquid funds in savings banks rather than in the form of cash; only household with large illegal incomes derived from second economy or criminal activities would be afraid of possible exposure through savings accounts. In the 1947 monetary reform in which currency of a new design replaced existing ruble bills cash was exchanged at the rate of one new ruble for 10 old rubles while savings were exchanged at a much more favorable rate. During the 1961 monetary reform all funds were exchanged at a 1:1 rate but people were clearly afraid to exchange what they considered to be excessive amounts of cash.

Table 1. R^2 for Selected Dependent Variables Regressed on Income

RUSSIA	1965	1970	1980	1985	1989	1990	1991
Savings (rubles)	.8210	.6788	.3044	.1652	.2281	.1575	.1125
Alcohol (rubles)	.8841	.8570	.6705	.4392	.1000	.0578	.0752
Alcohol (liters pure)		.8878	.6209	.2032	.0543	.0659	.0198
Vodka (liters)		.6687	.3817	.3005	.1017	.0002	.0020
Wine (liters)		.4405	.4854	.1237	.0211	.0617	.0435
Beer (liters)		.2506	.0796	.0774	.0158	.0208	.0015
Retail trade (rub.)	.9430	.9212	.8720	.8245	.7845		
Food (rubles)	.8276	.9063	.8229	.7374	.5811		
Nonfoods (rubles)	.7855	.8177	.7998	.6958	.7400		
Public dining (rub.)	.8661	.8279	.6224	.5589	.5553		
Services (rubles)	.6245	.6639	.6092	.5197	.4872		
Bread (kg)	.2890	.2082	.2315	.2005	.0922		
Fish (kg)	.3152	.1135	.2279	.1253	.2582		
Eggs (units)	.5497	.5015	.5154	.3531	.2456		
Sugar (kg)	.2691	.1729	.0235	.0491	.1086		
Meat (kg)	.8760	.8124	.6578	.5755	.5614		
Milk (kg)	.7148	.7264	.5786	.4340	.5465		

Table 1 continued. R^2 for Selected Dependent Variables Regressed on Income

UKRAINE	1970	1975	1980	1985	1989	1990
Savings (rubles)					.1982	
Alcoholic Bev. (rubles)	.7820			.1753		
100% Alcohol (liters)			.4001	.1282		.1784
Retail Trade (rubles)	.9116	.9031	.8523	.7070	.6394	
Food (rubles)	.9179			.6421	.5926	
Nonfoods (rubles)	.8579			.6111	.6702	
Public Dining (rubles)	.5932	.4878		.1390	.0439	
Services (rubles)	.6954	.7487		.4530	.6510	
Meat (rubles)	.9192				.7681	
Sausages (rubles)	.8333				.7336	
Butter (rubles)	.8912				.8464	
Milk (rubles)	.8927				.7699	
Sugar (rubles)	.1956				.0037	
Fish (rubles)	.7123				.6799	
Eggs (rubles)	.8466				.4823	

Notes:
a. R^2 values which are not statistically significant at 0.05 probability level are underlined.
b. Per capita statistical data used as the basis for these regression tests are reproduced in Appendix A. Particulars of regression tests are summarized in Appendix B.

Diagram 1: Saving over Income (Russia)

Diagram 2: Trade and Services over Income (Russia)

Diagram 3: Alcohol over Income (Russia)

Diagram 4: Food Products over Income (Russia)
Diagram 5: Trade and Services over Income (Ukraine)

Diagram 6: Alcohol and Sugar over Income (Ukraine)
Diagram 7: Selected Food Products over Income (Ukraine)

The idea of our approach can be illustrated by the following stylized example. Suppose that the true savings function of the consumers in a given region in year 0 is represented by[13]

$$s_i = a + by_i \qquad (1)$$

where s_i is the amount saved by region i consumers out of their current income y_i, and a and b are fixed coefficients. If both income and savings are measured correctly, a linear cross-sectional regression of savings on income would produce R^2 equal to 1. Suppose now that in year 1 each region experienced an officially unrecorded increase in income due to second economy activities, $\Delta y_i \geq 0$. If savings function (1) does not depend on the source of income, the increase in savings is $\Delta s_i = b\Delta y_i$ and the new savings are equal to

$$s_i + \Delta s_i = a + b(y_i + \Delta y_i) \qquad (2)$$

Assuming that the resulting change in savings has been officially recorded, the regression of recorded savings on recorded income would produce different regression coefficients a' and b', and, in general, would have $R^2 < 1$. It is possible to show that the decline of R^2 in this situation would measure the growth of the second economy only to the extent to which Δs_i cannot be expressed as a linear function of y_i. Similarly, if we use more than one independent variable then the changes in R^2 would reflect the dynamics of the second economy only as long as the observed changes in the dependent variable are not described by a linear function of both independent variables. Clearly, introduction of an additional independent variable would reduce the informational content of R^2 for our purposes. In this case the researcher has to be willing to interpret the estimates of the regression coefficients -- a highly unreliable technique with these particular data.

[13] Note that, due to limited data availability, we used the stock of savings, not their annual flows in our regressions. Nonetheless, in the following illustration we use incremental savings. This is done because in almost all other regressions we used flow variables.

Similar arguments can be used for the case when the initial R^2 is not unity.[14] The reasoning would be essentially the same if both income and savings changes were only partly reflected in the official statistics.

On a more substantive level, suppose that consumer incomes are growing but the state supply system constrained by the rigidity of official prices is not able to satisfy growing aggregate demand for consumer goods. Without the second economy, growing incomes accompanied by only slowly growing supplies of consumer goods would disturb the original relationship between income and savings, as well as between income and consumption. This would happen mainly due to the accumulation of excessive savings by the population.

These "forced savings," however, would not represent a long term equilibrium mainly because they provide strong incentives for second economy activities.[15] The emergence and growth of the second economy would redistribute incomes among groups of population and among regions, most likely exacerbating the observed imbalance in the official markets. In addition to the aggregate shortage, the insufficient responsiveness of the state supply system to the changing structure of consumer demand would produce further incentives for the development of the second economy.

With respect to the state-run retail trade network we can expect the following:

- Households which experience relatively large income growth from whatever source will increase their demand for (normal) goods and services offered in state retail trade.
- The increased demand generated by growing private incomes will be satisfied by additional deliveries to the trade network if the state supply system is flexible and responsive to demand pressures. If the supply system is not sufficiently flexible, and since state fixed prices do not respond to demand changes, shortages will result. The unsatisfied households would have to seek the goods in question in the black market or "from the back door" of state stores.

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[14] Strictly speaking, in this case additional assumptions would be necessary about sufficiently small correlation between errors in the initial regression, initial incomes, and increments to savings.

[15] For a discussion of the applicability of the concept of "forced savings" to the USSR see Alexeev (1988).

- Shares of certain goods produced by the state and distributed through the state retail trade network are in reality not consumer goods (i.e., goods the demand for which is determined by consumers' income) but intermediate producers' goods. For example, large quantities of bread and bakery products are used illegally as livestock feed, sugar is used in illegal home production of alcohol, building materials are used by semi-legal *shabashniki*, i.e., informal construction teams.[16] Demand for these goods which are classified as consumer goods by planners is in fact determined not by purchasers' income but by the demand for goods produced (illegally most of the time) by purchasers.
- In addition to goods and services originating from the state system, the growing second economy will be offering illegal or unavailable goods and services (appliance repair, spare parts, smuggled foreign goods, services of prostitutes, drugs, prohibited books and records, etc) affecting the expenditure pattern of some households and thus changing their purchases in state stores.
- In many instances, the turnover and the mix of goods in state stores will be also affected by surreptitious injection of goods undistinguishable from state-produced goods but in fact manufactured in clandestine second economy enterprises.
- The appearance and growth of the second economy would have varying effects in different localities, towns, and regions. Some may enjoy substantial increases in total (state and private) incomes while income growth in others may be modest. Accordingly, the imbalances in the regional state-run markets would differ in degree. In each region, however, the orderly relationships between average money income of the population (i.e., legitimate state income) and purchases of many goods and services in state retail trade extant in a period marked by the absence or minimal presence of

[16] The quantities involved are quite large. For example, bread used as livestock feed in subsidiary private agriculture was estimated at between 10 and 13 percent of total bread sold in retail trade (SOTSIAL'NOYE RAZVITIYE... 1989, p. 99); approximately 18 percent of sugar sold in retail trade in 1990 was diverted from human consumption for the estimated production of 1.5 billion liters of 40 percent moonshine (Goskomstat USSR, Press-vypusk..., 1991, p. 2). The data on retail trade sales are from Goskomstat SSSR, NARODNOYE..., 1991, p. 131.

the second economy, should be significantly disturbed by the growth of the second economy.

At this point we would like to make several additional remarks about the effects of the second economy on consumption and savings patterns of the population. First, with a few exceptions, money prices in the second economy were significantly higher than in the first economy. The large differences in the posted money prices, however, masked the fact that the effective prices of goods and services in the two economies were in fact quite close.[17] Consumers had to queue up or search for goods in the first economy adding time costs to their effective prices. Also, the first and second economy goods were often difficult to compare in terms of quality[18] and with respect to the amount of customer fraud that took place during sales. For these reasons, it is difficult to ascertain the precise income and substitution effects on overall consumption pattern produced by purchases in the second economy.

Second, the effect of black markets on consumer behavior may, in general, depend on the society's perception of the morality of black market activities. Berkeley-Duke emigre interviews and evidence in the Soviet media suggest that Soviet people are not much different from people in other societies and cultures. Thus, a certain share of the population considers active participation in some "strongly" unlawful second economy activities such as production of illegal goods and services, theft from places of employment, shortchanging or cheating customers or clients, exacting bribes or favors, and large scale "speculation" to be "immoral and reprehensible." A much larger share of the people, however, accepts without misgivings other types of participation in the second economy, such as moonlighting, purchasing black market goods, paying bribes and extending favors to officials, offering premiums and illegal gratuities to service personnel above state-fixed rates, and the like. It would thus be reasonable to expect that the impact of the growth of the second economy would be based

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[17]If it is possible to resell goods purchased in the first economy in the black market at zero transaction costs, the effective prices in the two economies would be the same. See Stahl and Alexeev (1985).

[18]Sometimes the second economy goods were generally considered to be superior on average, e.g. meat at kolkhoz markets. In other cases, such as with some types of hard liquor, the first economy products were had higher quality.

mostly on purely economic factors, and would not be confined to any particular group of the population.

Third, the Soviet second economy often has been described as mostly a redistributive activity. From this point of view, the second economy should not affect the aggregate values of savings and consumption in the system, except to the extent that preferences of the second economy operators are different from preferences of their customers. Even purely trading activities, however, may have very significant effects on aggregate savings and consumption. Consider, for example, a household which receives an extra 100 rubles of official income and has a marginal propensity to save of 0.2. If this household does all its shopping in the first economy, this income would add 20 rubles to aggregate savings and 80 rubles to aggregate consumption. But what if the household divides its consumption between the first and the second economy equally? Then it would save 20 rubles and provide an extra 40 rubles of income to the second economy operator, who will in turn save 8 rubles (if her saving propensity is also 0.2 and her cost of goods sold is zero). The total amount of savings is now 28 rubles.[19] Moreover, the presence of the second economy changes both the transaction and the precautionary demand for money by altering the consumers' opportunities to earn and spend money.

Finally, there is one important difference between the savings-income and retail trade-income relationships. Notice that we used regional data in our analysis. It is possible, even likely, that centrally planned allocations of consumer goods to regions depended to some extent on official consumer income in these regions. For this reason, we expect the relationship between official savings and official income to be more affected by the second economy than the retail trade-income relationship.

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[19]Of course, if the second economy operator worked for the state instead, she would have earned some money also and saved 20% of that. To argue this case, however, we would have to make some rather restrictive assumptions, for example, about availability of employment opportunities in the absence of the second economy.

Let us now return to the data presented in Table 1. Are there other explanations for the decline of R^2 in our regressions besides the growth of the second economy?[20] We consider one such possibility below. While it is not likely to account for such a strong trend in R^2, we note that it and our previous explanation are not mutually exclusive.

The relationships estimated in our regressions may become less linear at different real income levels. In this case, the strength of the linear relationships might have declined due to either growing or decreasing real incomes of the regions. In other words, if real income in 1965 was very low, and if the strength of (per capita) savings-income relationship is inversely related to real income, then growth of real income between 1965 and 1970 would result in lower R^2 in 1970 regressions. A related reason is that income distribution among the regions might have changed over time altering the relationships among the official data. For example, if regional income inequality had been decreasing then it might be more appropriate to compare the full sample regressions for the later years with the earlier year regressions for the middle range of the sample (i.e., without the outliers).

Consider first the influence of changes in interregional income distribution. The distribution of income and of other official characteristics among Soviet regions did change significantly between 1965 and 1989. The Gini coefficients for distribution of average income of regions declined from 0.157 in 1965 to 0.099 in 1985 and to 0.098 in 1989. The coefficients of variation of average regional income decreased from 0.397 to 0.259 and 0.254, respectively. The lower regional dispersion of income, other things being equal, could have caused weakening in the relationship between income and various characteristics of consumer behavior.[21] Changes in income distribution, however, do not appear to explain everything.

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[20]Strictly speaking, the relationships among official data could be affected by shifts in the geographical distribution of the second economy, instead of its overall growth. For example, if the second economy activities used to be uniformly distributed among the regions but later somehow became unevenly distributed, we would also observe declines in official data correlations. Such a situation appears to be very unlikely, however, as it is difficult to think of the reasons for significant locational shifts in the second economy.

[21] In the limit, if all regions had the same average per capita official income then R^2 would have been zero for any non-constant dependent variable. More importantly, imagine that for one sample the data on income and savings form an almost perfect circle so that the slope coefficient is arbitrary and R^2 is close to zero. Then an introduction of one outlier would immediately "fix" the slope coefficient and significantly increase R^2. For this reason, in order to achieve comparability it might be necessary to remove outliers from some of the annual samples.

For example, consider the relationship between income and savings. First of all, notice that the decline in income inequality was accompanied by an even more precipitous decline in inequality of interregional savings distribution. The coefficient of variation of per capita official savings went from 0.496 in 1965 to 0.219 in 1989. Second, if we eliminate income outliers for the earlier years (1965, 1970, 1980) so that the remaining sample has about the same degree of income inequality as the full sample does in 1985 and 1989, the trend toward lower R^2 remains, albeit in a somewhat weaker form.

The changes in the average level of real income in Russia and Ukraine also do not explain the trends in R^2 for regressions of either savings or retail trade turnover on income. Presumably, real income of Russians and Ukrainians grew at least between 1965 and 1970 and, possibly, even later. Within moderate income ranges the relationship between savings and income is usually stronger at higher income levels. In fact, in our Russian data, R^2 for the richest half of the regions in all annual income-savings samples is much higher than R^2 for the poorest half of the regions. Nonetheless, we observe a precipitous drop in R^2 between 1965 and 1970, as well as for later years. Similar arguments can be used with respect to the relationship between retail trade turnover and income.

IMPLICATIONS OF SECOND-ECONOMY GROWTH FOR SYSTEM EFFICIENCY

Our analysis suggests that the second economy was growing rapidly between 1965 and 1985. Meanwhile, the performance of the Soviet economy in general seems to have been deteriorating over the same period of time. Did second-economy growth exacerbate or alleviate the economic downturn? The implications of the existence of the second economy for efficiency of the Soviet-type economy have been rather extensively studied in the literature. We will offer a brief non-exhaustive survey and some additional comments.[22]

[22]In the present paper we have concentrated on the second economy in consumer markets. The so-called shadow economy in the area of intermediate goods production has been large and, presumably, growing as well (see Grossman, 1982). In this section we will comment on the efficiency implications of the second economy in both producer and consumer goods markets.

Clearly, second economy transactions among socialist enterprises, usually being voluntary, benefit the transacting enterprises (managers). The question about whether second economy activities benefit the society at large can be considered in two steps. First, did it facilitate plan fulfillment, and second, did plan fulfillment benefit the society. While the second question might be more important, it was the more specific first question that has attracted a greater amount of attention in the literature. Montias and Rose-Ackerman (1981) have argued that a mutually beneficial transaction between two enterprises may easily be detrimental to the rest of the economy if other enterprises are somehow prevented from bidding. Their argument assumed that the initial planned allocation of inputs was at least close to efficient in a sense of equating marginal rates of technical substitution among user enterprises. They noted that inefficiency of the plan allocations would make second economy transactions potentially more efficient. Of course, if some firms are handicapped in bidding for inputs free market allocations need not be efficient either. The impediments to wide participation in bidding on particular deliveries, however, are presumably much greater in the second economy than in the western-type market economy. By their very nature second economy negotiations are not widely advertised. In fact, difficulties in disseminating information constitute one of the most significant problems for functioning of the second economy.

Ericson (1981, 1983) argued that second economy reallocation of inputs in the absence of informational problems represents Pareto improvement over the planned allocation.[23] Ericson's models, however, assume that managers' utility functions depend only on official output of the enterprise and its final holdings of official funds in the state bank. Of course, the Soviet managers were interested in plan fulfillment but Ericson's assumption disregards any tradeoffs between plan fulfillment and unofficial personal enrichment. Such tradeoffs were surely present given the size of the second economy in consumer markets. Introducing cash holdings (illegally obtained income) into managers' utility functions would destroy the Pareto improving nature of the second economy reallocations of inputs. A manager may sell

[23]In Ericson's model second economy transactions are facilitated by cash side-payments. This cash can leak out of the system to induce economic agents to participate in illegal transactions. Because of this leakage the outcome may not be (constrained) Pareto optimal in a sense that some efficient trades may not be performed prior to disappearance of all cash due to this leakage.

part of the enterprise's input allocations or its output in order to obtain extra cash even if this sale hurts the enterprise's plan fulfillment. The more important the weight of cash holdings in the utility function of a manager, the likelier the negative effect of the second economy on official performance. The growth of the second economy in consumer markets probably has been increasing the attractiveness of (unofficially accumulated) cash.

In addition to reallocating inputs, the second economy may attract part of the work force into completely unplanned production of consumer goods. While this in itself may be beneficial to consumers, the planners' actions in response to this redistribution of the economy's resources may reduce the efficiency of the entire economy.[24]

The issue usually discussed in evaluating the role of the second economy in intermediate inputs market is whether or not it facilitated plan fulfillment. This, however, appears to be a rather unreliable criterion of overall efficiency implications of the second economy. A serious problem with the second economy's role in a Soviet-type system is that it may facilitate achievement of "wrong" goals more or less arbitrarily imposed by the central planners. If the second economy facilitates fulfillment of such a plan it may actually deduct from the efficiency of resource use in the economy. In the Soviet Union in particular the planners usually gave priority to heavy industry at the expense of consumer goods production. Helping fulfill such a plan may not be a good thing. A related problem arises when the second economy weakens or even destroys the feedback to the planners from their actions, covering up the shortcomings of the planned allocations and preventing the planners from realizing their mistakes. For example, suppose that skis were shipped to the southern port of Odessa but there was a shortage of skis in the north of the USSR. The second economy operators would rectify the mistake and deliver the skis to the north (at the cost of additional transportation), but the planners would not learn about the mistake and might keep allocating the skis to Odessa in the following years.

In this respect, the Soviet planners may be likened to a driver of a car who sees a very distorted image of the road. When the road conditions change, the driver tries to adjust. The

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[24]See Wellisz and Findlay (1986). Note, however, that the planners there are rather unsophisticated in that they do not understand the full extent of their actions' consequences which were displayed in Wellisz and Findlay's model.

problem arises when the driver sees a pothole on the right side of the road, while in reality it is on the left side. The driver's maneuver to avoid the false image may lead right into the actual pothole.

Significant inefficiency of second economy operations results from transactions costs being quite high there due to costs of obtaining reliable market information, difficulty of enforcing contracts, and the possibility of punishment.[25] Also, second economy production may suffer from its small scale.

Inefficiencies of another sort arise in situations where the second economy is introduced into consumer markets to reallocate the first economy's allocation achieved through queuing (or search). Allocation of goods through queuing alone is obviously inefficient mainly due to the expense of time on waiting. Also, because marginal value of time would not in general be the same among individuals there would be room for improvement by allowing people to trade goods acquired as a result of queuing (or in effect letting some people hire others to queue instead of them). Allowing for resale of goods purchased in the first economy, however, makes queues even longer as the benefits to queuing increase for individuals with relatively low value of time. This effect can result in lower efficiency of the second economy allocation relative to pure rationing by queues.[26]

The consequences of the second economy growth to the Soviet society were not, of course, limited to the issues of economic efficiency in the narrow sense of the word. The impact was much broader, affecting virtually all aspects of Soviet life. As a frequent Soviet commentator on the second economy, Tatiana Koriagina observed: "The shadow economy

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[25]With the exception of the threat of punishment all other types of transactions costs in the second economy may actually be smaller. For example, in an overregulated economy underground operations may be cheaper as the operators do not have to abide by regulations. Also, contract enforcement based on informal mechanisms (Kronman, 1985) may sometimes be superior to the third party arbitrage (Millar, 1984).

[26]This phenomenon is analyzed in Stahl and Alexeev (1985). Gang and Tower (1988) provide a simple example. The existence of privileged access to goods in short supply may make matters even worse (Alexeev, 1989). It has to be noted that these models disregard the effect on production of introduction of black markets in exchange. When resale of goods acquired in the first economy is allowed, relatively poor consumers do most of the queuing. If income is correlated with productivity this allows more productive workers to work more in production and spend less time in queues. As a result, total supply of goods goes up and queues become shorter. This is true, of course, only on the assumption that freed up workers produce something useful for consumers, which was not necessarily true in the USSR.

alleviates shortages in consumer markets and, at the same time, provokes their growth. The second emerges as the obverse side of the lack of imbalances in all forms. The presence of shortages produces the growth of organized criminal economic groups and the latter lead to socio-economic and political destabilization of the society."[27]

As we can see, the implications of the second economy for the efficiency of the entire economy are not unequivocal. The Soviet-type economy probably could not survive for any significant period of time without some second economy activities greasing its wheels. As long as the second economy operates on the margins, its effect seems to be mostly beneficial to the rest of the economy. When the second economy grows too large, however, its role seems to become more and more dysfunctional. Its transactions costs, such as difficulties with contract enforcement and informational problems, grow exponentially with its size, the destruction of feedback to the planners becomes more widespread causing costlier errors,[28] the managerial and workers' incentives unrelated to plan fulfillment become stronger. The growth of the second economy probably was mainly a consequence, not the principal reason for disintegration of the Soviet economic system. Nonetheless, it did apparently contribute to the deterioration of the Soviet economic performance in the 1970s and 1980s.

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[27]Koriagina (1990), p. 113.

[28] This effect was probably exacerbated by the reluctance of the Soviet planners to take adequate account of or even to study the second economy and its influence on the first economy as shown in Section 2.

RESEARCH AGENDA

This study is, in some sense, only a pilot attempt to identify factors involved and to quantify the disruptive influence of the second economy on the income-expenditures relations in the household sector in Russia and Ukraine in the last twenty years. Several additional challenging aspects of these relations remain to be explored. At this time we are concentrating on two specific areas.

■ We have established that the degree of correspondence between state income and savings and consumer expenditures in state trade measured by R^2 got significantly weaker between 1965 and the late 1980s. We attribute this phenomenon to the growth of the second economy and its adverse impact on the recorded behavior of household in the state economy. We did not, however, address the issue of the relative order of magnitude of the second economy. How large must the second economy income be relative to the state income to adversely affect the high degree of correlation between the latter and, say, savings? For example, is the growth of the second economy income from one to five percent of state income in a given time span sufficient to produce a statistically significant drop in R^2? Or should the growth of the second economy's share be in the 40 to 60 percent range to have an impact?

Thus we have to develop an instrument for empirically measuring the sensitivity of R^2's with respect to changes in second economy variables such as income. While we do not expect to be able to deduce an accurate measure of the overall size of the second economy so rough measures of sensitivity would be useful to asses independent estimates.

■ The second aspect of the relations between money income of the population and such dependent variables as savings and expenditures we are investigating lies with the direction of the change in R^2's. If a decline of R^2's indicates a disruptive invasion of the second economy it would be reasonable to interpret an increase in values of R^2's as signifying a reduction of unrecorded illegal incomes or transactions.

As the newly independent states are moving from a centrally-planned to a market system a large share of second economy activities should be gradually legalized and the normal high degree of correspondence between incomes and expenditures should be restored. The availability of statistics necessary for such tests is uncertain at this point but reorganized statistical agencies of newly independent states, particularly in the Baltics and in Russia are experimenting with new statistical measures and publishing new income, savings, and expenditures series. By redesigning the definition and the scope of money income and expenditures of the population and running appropriate regressions we could thus conceivably measure the progress of these countries towards markets.[29]

This should be especially interesting because up to this time scholarly studies of transition processes did not offer any comprehensive quantitative measures of progress towards markets except for presenting collections of simple ratios of private over state employment and production or shares of privatized enterprises.

[29] We cannot expect all second economy activities to disappear even with the establishment of truly free consumer markets. Activities such as illegal home distillation of alcohol, smuggling, prostitution, and production and marketing of narcotics are likely to continue to be present.

APPENDIX A. DESCRIPTION OF THE DATA USED IN THE STUDY

The scope of this study was severely limited by the availability of the required Soviet data. The primary set of variables around which the entire study is built is money income of the population broken down into a number of regions of the former USSR large enough for meaningful regression analyses. These money income data were long considered secret by Soviet statistical agencies and had not been published in the open literature until the late 1980s. In fact, they remain scarce even now. The first set of per capita money income of the population for a series of years for 72 oblasts, krais, and autonomous republics of the RSFSR, and the cities of Moscow and Leningrad was included in a 1990 Goskomstat RSFSR mimeographed statistical handbook of which only 50 copies had been printed (Goskomstat RSFSR, POKAZATELI... 1990, pp. 83-84). It was precisely this set of statistics that provoked our interest and originated this study. Soon thereafter Treml was given an unpublished set of similar data for 26 oblasts and the city of Kiev by Goskomstat of the Ukraine. Despite an extensive search through all old and newly available and declassified statistical sources and direct inquiries with central statistical agencies of newly independent states no additional data on money income of the population have been obtained.[30]

The study is thus built on data on incomes and expenditures for regions of Russia and Ukraine but for different years and products.

A total of about 220 simple linear regressions (with dependent variables such as per capita bank savings and consumption of goods and services, and money income as an independent variable) were run. It should be added that we tested more variables than described below and summarized in our results. In our choice of individual consumer goods we concentrated on food products because the data were more readily available and because food is more homogenous with smaller qualitative intertemporal changes.[31] In several instances we ran regression tests on products with low income elasticity of demand, such as salt, matches, vegetable oil, and vegetables. As expected, these tests produced very low or statistically insignificant R^2's for all years and were, therefore, omitted from the study.

Under food products we tested consumption of food both in value terms and in physical units.

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[30]Goskomstat of Belarus has published the data on money income of the population for six oblasts and the city of Minsk for two years only (1985 and 1990), and Goskomstat of Kazakhstan released income statistics for 19 oblasts and the city of Alma Ata for 1990. The absence of data for more years and of other relevant statistics such as savings and sales made these sets unusable.

[31] For example, a pilot study of sales of television sets over income produced widely fluctuating regression coefficients. The probable reason is that the mix of cheaper black-and-white and much more expensive color sets changed drastically during the period under consideration.

DEFINITIONS AND SOURCES OF DATA

1. Money income of the population covers all legal direct monetary payments, loans and transfers from the state to the population. The state is defined broadly to include cooperatives introduced in 1987. Money income of the population thus includes payments and transfers of funds for some private economic activities, such as sales of produce grown on subsidiary private plots to the state, or payments for collected scrap metal; it also includes payments for used goods sold by private individuals to commissary stores of the retail trade network. It excludes such transactions as sales of produce grown on subsidiary private plots to the public on urban kolkhoz markets and other legal or illegal transactions among private individuals (Gosplan et al., 1982).[32] It should be noted that unlike other data sets money income of the population published in 1990 excluded the city of Moscow. Accordingly, we had to omit the city of Moscow from all regressions.

One question which has bothered Western specialists for a long time was whether military pay and money allowances (e.g., uniform allowance, payments for public transportation during home leaves, etc) are included or excluded from various aggregate income measures published in Soviet statistics, such as average or total wages. In July 1991, Mr. Barry L. Kostinsky, Assistant Division Chief, Center of International Research, Bureau of Census and Professor Treml had several interviews with a group of statistical officials at Goskomstat USSR. We were explicitly told that data on money income of the population category were collected from state bank offices and, therefore, included military pay and allowances.

2. The Time Period: The study covers 1965, 1970, 1980, 1985, and 1989 (and in some cases 1990 and 1991) for Russia and 1970, 1975, 1980, 1985, and 1990 for Ukraine. It should be noted that statistical data for the variables used in the study (income, savings, and purchases of goods and services) are also available for more recent years, e.g., for Russia for 1990 and 1991. The period between 1965 and the mid to late 1980s was marked by relative stability of state consumer prices for goods and services which made it possible for us to run regressions without being concerned whether changes in quantities purchased were caused by prices changes or by other factors. Inflationary pressures which accompanied Gorbachev's *perestroika* began to be felt in state consumer markets in the late 1980s. Ideally, we should have selected 1987 or 1988 as the last year of relative price stability but data for these years were not available. Accordingly, we had no choice but to select 1989 as the last year for Russia (except for the market in alcoholic beverages the analysis of which is carried through 1991). The analysis of the last year for Ukraine was complicated by the fact that we had the

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[32] Strictly speaking part of the so-called legal or official money income of the population is not legal. We know of the widespread practice of *pripiski*, i.e., falsified overstatement of output and wage accounts in state enterprises, particularly in construction. In these cases, funds are paid by enterprises to workers from bank disbursements and would, therefore, be counted with the official wage accounts although in fact these funds should be viewed as elements of second economy or illegal private incomes. This issue, however, does not affect the basic data definitions and the findings of this study. Falsified or not the funds paid out become a part of the money income of the population balances used by state bureaucrats in planning of retail trade.

data for the money income of the population for 1990 but the last year for which we had the needed expenditure variables was 1989. As an exception we tested the relationship of all 1989 expenditure variables against 1990 income figures.

3. Savings: Per capita savings deposited in savings banks at the end of the year. It should be thus noted that this category does not cover all forms of household savings. Deposits in Gosbank (a minor category), purchases of state bonds and changes in currency holdings are excluded. Since the issue of the relative stability of state consumer prices is not relevant in this case, savings over income regressions were also run for RSFSR for 1990 and 1991. Savings data broken down by regions for Ukraine was found for one year only - 1989 - and we could not, therefore, study changes in relationships between income and savings over time. As seen from the tabulated data, the low value of R^2 of 0.198 is similar to R^2 for savings-income relationships in Russia and is included in the study for illustrative purposes. (Goskomstat RSFSR, POKAZATELI... 1990, pp. 93-94; Goskomstat UkSSR, NARODNOYE..., 1990, p.98).

4. Aggregate Retail Trade Values. Both for Russia and Ukraine we ran regression tests on per capita overall sales in state and cooperative retail trade and three components of retail trade, i.e., sales of food products, sales of nonfood products, and public dining. All retail trade data are from Goskomstat RSFSR, POKAZATELI ... 1990; Goskomstat RSFSR, TORGOVLYA... 1991; Goskomstat Rossii, POKAZATELI... 1992; TsSU UkSSR,RADYANSKA... 1971; Goskomstat UkSSR, ROZDRIBNA... 1990, and Goskomstat UkSSR, NARODNOYE..., 1990.

5. Meat, milk and dairy products, fish, and eggs. We had a choice of two measures of consumption of these products. Standard Soviet statistical sources have traditionally published data on total meat, milk and dairy products, and sugar consumption, i.e., consumption combining quantities purchased in retail trade stores, with sales on urban kolkhoz markets, intra-village markets, and those produced on private auxiliary agricultural plots and consumed by producing households. Total consumption also included the use of sugar and milk and dairy products in other food processing such as baking, confections etc. The second measure available to us was meat, milk[33] and dairy products, fish and eggs delivered to the retail trade networks (*postavka v torgovlyu po rynochnomu fondu*). The latter excludes industrial uses of these products, kolkhoz market and private plot consumption and is thus more homogeneous. There is one disadvantage, however, in that deliveries are not necessarily equal to sales because of possible changes in stocks and spoilage. Testing suggested that stocks of these products in state consumer trade networks did not vary much over time and thus we accepted the deliveries as the more accurate measure of consumption.

[33] Milk and milk products were reported in Soviet sources converted to standard units with 3.2 percent fat content in the 1965-1980 period. In 1985 the definition was changed to 3.6 percent fat. Maybe this change in the conversion method explains the somewhat erratic behavior of regression coefficients in 1985 and 1989.

6. Alcohol. Second economy is particularly widespread in alcoholic beverage markets (see Treml, "Alcohol..." 1985) and therefore as much data as could be found were included in the study. The following consumption statistics were used for Russia: purchases of all types of alcoholic beverages in retail trade in rubles, total consumption of pure alcohol (i.e., consumption of all alcoholic beverages converted to 100% alcohol dependent on the alcohol content of specific beverages), vodka, wine, and beer in liters . The data on sales of alcohol in rubles were obtained from retail trade statistics and shares of alcohol in total. For Ukraine we use sales of all alcoholic beverages in rubles and consumption of pure alcohol.

7. Other food products. Other food products consist of two groups. For Russia we used the data on per capita consumption of bread and sugar measured in kg. For Ukraine we found the data (unfortunately for two years only, 1970 and 1989) for state retail sales of meat, sausages, milk, butter, sugar, fish, and eggs measured in rubles.

8. Consumer services Soviet statistical sources classify all services paid for by the population into consumer or *bytovye* services such as repairs of soft goods and durables, laundries and dry cleaning establishments, barbershops, public baths, photography etc., and "other services" such as transportation, mail, telephones, housing and utilities, cultural, educational, entertainment, and the like. The data used in this study covers only consumer services. The somewhat erratic behavior of regression coefficients for services in Ukraine could be possibly explained by the fact that services in 1970 an 1975 were measured in constant prices of unknown and different base years. Starting in 1980 the data are in current prices.

9. The Data. Statistical data on money income of the population, savings, and expenditures on goods and services are shown in tables below. Tables A1-A18 cover Russia, tables A19-A27 cover Ukraine. All data are given per capita. Values are in current rubles.

Table A1. Russia. Money Income of the Population, Rubles

	1965	1970	1980	1985	1989	1990	1991
1 Archangel	703	1015	1720	1905	2346	2628	5472
2 Vologda	544	817	1394	1636	2033	2359	5159
3 Murmansk	1285	1598	2343	2570	3130	3583	7487
4 Karelian ASSR	717	986	1619	1819	2324	2676	6111
5 Komi ASSR	909	1321	2043	2290	2945	3312	6922
6 Leningrad - city	1039	1285	1718	1881	2498	2974	6382
7 Leningrad	562	823	1344	1551	1997	2286	4787
8 Novgorod	557	827	1411	1604	2044	2411	5238
9 Pskov	508	788	1373	1641	2030	2416	5200
10 Brayansk	434	680	1222	1537	1933	2428	5280
11 Vladimir	602	862	1399	1636	2036	2285	4890
12 Ivanov	599	859	1376	1577	1971	2274	5364
13 Kalinin	572	839	1383	1616	1990	2300	4897
14 Kaluga	539	825	1389	1669	2086	2422	5062
15 Kostroma	537	796	1401	1656	2044	2292	4911
16 Moscow	682	901	1346	1555	2037	2350	5239
17 Orlov	454	758	1339	1727	2216	2620	5806
18 Ryazan	496	767	1336	1652	2040	2355	4934
19 Smolensk	531	792	1350	1625	1977	2293	4786
20 Tula	612	880	1419	1700	2077	2390	5304
21 Yaroslav	623	898	1446	1682	2103	2457	5170
22 Gorkyi	566	848	1362	1693	2104	2411	5055
23 Kirov	506	795	1356	1609	2050	2325	4805
24 Maryi ASSR	385	639	1152	1400	1747	2054	4432
25 Mordva ASSR	382	612	1214	1501	1895	2228	4478
26 Chuvash ASSR	343	565	1058	1331	1707	1982	4499
27 Belgorod	408	649	1216	1585	1968	2338	5209
28 Voronezh	497	706	1200	1456	1824	2227	4227
29 Kursk	387	623	1179	1572	1897	2247	4772
30 Lipetsk	459	720	1255	1572	1996	2316	4970
31 Tambov	433	653	1189	1552	1915	2170	4714
32 Astrakhan	536	801	1318	1577	1956	2353	4922
33 Volgograd	609	820	1282	1510	2025	2381	5261
34 Kuybyshev	615	894	1330	1568	2043	2401	5496
35 Penza	472	741	1320	1632	1999	2303	4670
36 Saratov	602	840	1414	1653	2072	2368	4964
37 Ulyanovsk	472	748	1286	1568	1986	2273	4902
38 Kalmyk ASSR	568	781	1309	1620	2226	2883	6917
39 Tatar ASSR	456	696	1242	1515	1925	2242	4734
40 Krasnodar Krai	534	757	1231	1402	1868	2242	5314
41 Stavropol Krai	521	740	1252	1470	1947	2327	5495
42 Rostov	605	845	1420	1631	2123	2492	5333
43 Dagestan ASSR	329	502	818	975	1334	1545	3475
44 Kabardino-Balkar ASSR	463	666	1127	1304	1688	1992	4070
45 North Ossetin ASSR	569	726	1272	1381	1768	2126	4485
46 Checheno-Ingush ASSR	369	533	859	986	1474	2020	4295
47 Kurgansk	490	756	1352	1566	1990	2300	4956
48 Orenburg	498	739	1327	1554	1910	2304	4688
49 Perm	572	833	1339	1553	1956	2226	4756
50 Sverdlovsk	680	943	1437	1673	2133	2484	5243
51 Chelyabinsk	651	905	1381	1646	2106	2479	5550
52 Bashkir ASSR	431	641	1158	1431	1824	2169	4613
53 Udmurt ASSR	498	778	1336	1559	1991	2306	5229
54 Altai Krai	483	734	1362	1667	2013	2406	5098
55 Kemerovo	622	883	1491	1758	2238	2702	6219
56 Novosibirsk	590	855	1467	1676	2202	2590	6196
57 Omsk	564	812	1420	1652	2017	2328	5144
58 Tomsk	672	1037	1577	1958	2685	3124	6453
59 Tyumen	595	967	2193	2699	3539	4027	9403
60 Krasnoyarski Krai	720	1060	1678	2004	2461	2794	6523
61 Irkutsk	678	983	1564	1781	2340	2666	6182
62 Chita	556	834	1343	1510	1933	2222	4818
63 Buryat ASSR	558	823	1422	1612	2120	2361	4898
64 Tuva ASSR	470	709	1112	1348	1647	1945	4224
65 Primorski Krai	785	1124	1722	1930	2587	2960	6050
66 Khabarovs Krai	737	1093	1765	2012	2571	2979	6657
67 Amur	615	959	1627	1800	2418	2880	6134
68 Kamchatka	1437	2048	2934	3331	4143	4822	8961
69 Magadan	1790	2538	3465	3711	4691	5470	10737
70 Sakhalin	1150	1629	2456	2730	3395	3932	8075
71 Yakut ASSR	1043	1577	2548	2959	3655	4260	9423
72 Kaliningrad	724	976	1485	1735	2166	2528	5726

Table A2. Russia. Bank Savings Deposits, Rubles, End of the Year

		1965	1970	1980	1985	1989	1990	1991
1	Archangel	81	180	602	803	1165	1234	1620
2	Vologda	76	178	563	794	1136	1247	1701
3	Murmansk	217	420	935	1118	1592	1711	2214
4	Karelian ASSR	60	131	453	599	941	1020	1449
5	Komi ASSR	148	320	752	920	1380	1467	1902
6	Leningrad - city	182	295	663	911	1340	1429	2019
7	Leningrad	67	147	450	629	959	1090	1616
8	Novgorod	75	185	559	749	1073	1192	1608
9	Pskov	75	206	645	890	1231	1379	1840
10	Brayansk	63	174	637	935	1375	1559	2233
11	Vladimir	84	189	589	827	1213	1339	1987
12	Ivanov	97	209	633	881	1265	1410	2031
13	Kalinin	109	250	715	984	1369	1508	2292
14	Kaluga	84	218	693	948	1388	1535	1833
15	Kostroma	86	195	644	907	1279	1379	2814
16	Moscow	84	181	575	838	1297	1442	2651
17	Orlov	88	258	835	1217	1743	1976	2301
18	Ryazan	84	219	748	1133	1594	1760	1881
19	Smolensk	85	218	680	921	1281	1418	1959
20	Tula	82	213	729	1059	1546	1705	1819
21	Yaroslav	107	227	645	889	1248	1357	1819
22	Gorkyi	89	210	692	1001	1426	1551	2070
23	Kirov	84	211	680	918	1325	1459	1905
24	Maryi ASSR	57	148	505	697	1045	1189	1541
25	Mordva ASSR	73	186	685	1034	1496	1669	2195
26	Chuvash ASSR	69	168	545	786	1152	1281	1780
27	Belgorod	86	226	770	1097	1618	1887	2618
28	Voronezh	113	264	851	1176	1711	1929	2554
29	Kursk	71	184	648	977	1410	1603	2294
30	Lipetsk	76	212	704	1033	1528	1716	2257
31	Tambov	85	221	781	1157	1657	1856	2471
32	Astrakhan	82	174	533	693	1034	1225	1713
33	Volgograd	108	236	747	978	1470	1712	2337
34	Kuybyshev	102	228	679	912	1360	1508	2123
35	Penza	81	219	764	1106	1574	1776	2337
36	Saratov	119	268	785	1030	1442	1628	2150
37	Ulyanovsk	79	202	691	924	1315	1460	2030
38	Kalmyk ASSR	67	149	476	591	1020	1403	2213
39	Tatar ASSR	61	148	516	728	1161	1321	1821
40	Krasnodar Krai	113	270	826	1094	1561	2111	2795
41	Stavropol Krai	107	251	784	1045	1533	2132	2544
42	Rostov	107	254	743	973	1421	1692	2460
43	Dagestan ASSR	48	133	411	563	862	1050	1517
44	Kabardino-Balkar ASSR	66	178	588	777	1156	1402	2096
45	North Ossetin ASSR	94	241	752	983	1476	1805	2831
46	Checheno-Ingush ASSR	53	134	382	486	713	817	1075
47	Kurgansk	68	187	560	716	1057	1159	1585
48	Orenburg	80	210	675	896	1299	1474	2041
49	Perm	66	153	455	617	949	1023	1363
50	Sverdlovsk	76	173	504	667	1036	1131	1594
51	Chelyabinsk	73	179	529	697	1077	1174	1626
52	Bashkir ASSR	53	136	482	670	1058	1199	1689
53	Udmurt ASSR	63	157	489	643	1000	1113	1430
54	Altai Krai	66	166	569	737	1127	1620	1945
55	Kemerovo	68	163	508	652	1051	1215	1823
56	Novosibirsk	71	167	561	705	1094	1259	1712
57	Omsk	66	161	538	687	995	1113	1535
58	Tomsk	86	203	581	730	1169	1332	1746
59	Tyumen	69	180	649	826	1342	1463	2084
60	Krasnoyarsk Krai	101	232	603	738	1115	1684	2127
61	Irkutsk	78	178	495	615	1011	1188	1684
62	Chita	52	112	322	426	772	889	1241
63	Buryat ASSR	46	106	350	446	822	964	1322
64	Tuva ASSR	35	86	220	307	493	509	795
65	Primorsk Krai	111	219	611	764	1237	1409	1871
66	Khabarovs Krai	91	187	578	734	1148	1268	1719
67	Amur	76	170	522	644	1121	1329	1842
68	Kamchatka	253	448	985	1226	1813	1866	2310
69	Magadan	317	600	1165	1365	2108	2268	3123
70	Sakhalin	192	359	850	1058	1580	1708	2389
71	Yakut ASSR	139	323	761	966	1583	1945	2595
72	Kaliningrad	84	188	556	802	1227	1394	1974

Table A3. Russia. Sales of Alcoholic Beverages in Retail Trade, Rubles

	1965	1970	1980	1985	1989
1 Archangel	95.7	142.1	243.3	249.0	239.4
2 Vologda	138.4	166.3	242.9	240.8	279.7
3 Murmansk	77.8	118.8	222.7	247.4	240.1
4 Karelian ASSR	94.4	140.5	254.6	270.6	253.1
5 Komi ASSR	116.3	177.3	278.6	263.4	294.9
6 Leningrad - city	101.2	149.0	227.7	227.6	304.7
7 Leningrad	93.1	138.6	238.4	248.2	269.1
8 Novgorod	82.3	127.2	252.8	268.2	271.2
9 Pskov	75.0	128.5	249.5	264.9	208.0
10 Brayansk	54.9	88.9	167.0	187.1	159.5
11 Vladimir	83.0	113.1	197.0	222.9	249.4
12 Ivanov	78.6	109.7	192.0	220.0	225.8
13 Kalinin	78.3	124.0	230.7	252.9	250.6
14 Kaluga	80.6	120.5	224.4	245.7	226.0
15 Kostroma	75.6	116.9	227.9	256.3	263.7
16 Moscow	88.5	119.8	195.2	204.4	216.0
17 Orlov	67.0	102.6	194.0	211.2	228.9
18 Ryazan	73.3	112.7	198.7	220.7	215.4
19 Smolensk	80.3	133.7	232.3	265.2	234.9
20 Tula	76.2	108.1	180.8	206.4	186.5
21 Yaroslav	78.4	119.9	214.6	240.2	264.0
22 Gorkyi	76.4	115.9	193.7	222.9	245.0
23 Kirov	76.3	125.2	217.7	200.7	238.8
24 Maryi ASSR	52.3	91.0	165.4	193.8	212.8
25 Mordva ASSR	51.0	85.1	174.5	194.4	225.5
26 Chuvash ASSR	44.8	74.1	158.3	178.8	187.4
27 Belgorod	51.3	83.9	148.5	151.5	152.1
28 Voronezh	65.7	97.4	157.1	177.8	147.1
29 Kursk	45.0	73.2	150.0	176.9	179.9
30 Lipetsk	61.8	99.3	177.7	204.1	221.7
31 Tambov	63.7	101.1	190.8	216.9	215.3
32 Astrakhan	73.3	111.6	205.5	172.9	162.8
33 Volgograd	79.7	113.1	184.6	194.9	192.9
34 Kuybyshev	81.7	116.2	181.8	177.4	181.2
35 Penza	63.4	97.5	175.7	196.2	211.5
36 Saratov	76.9	109.6	191.9	201.8	174.4
37 Ulyanovsk	71.1	113.3	188.2	192.1	228.1
38 Kalmyk ASSR	78.8	126.2	199.6	182.8	178.8
39 Tatar ASSR	63.2	101.0	173.9	182.2	193.6
40 Krasnodar Krai	62.7	92.5	155.2	149.0	126.7
41 Stavropol Krai	67.6	96.6	165.5	160.7	135.3
42 Rostov	73.4	105.8	171.7	181.7	166.0
43 Dagestan ASSR	33.3	48.4	74.3	83.9	102.1
44 Kabardino-Balkar ASSR	53.6	85.4	144.6	154.0	154.8
45 North Ossetin ASSR	42.5	63.7	104.1	110.3	106.0
46 Checheno-Ingush ASSR	37.6	47.7	69.9	63.1	70.3
47 Kurgansk	71.9	116.8	201.1	205.3	184.0
48 Orenburg	68.7	104.3	193.1	144.1	161.3
49 Perm	79.6	118.1	217.8	224.8	222.1
50 Sverdlovsk	82.6	116.4	204.0	206.9	209.9
51 Chelyabinsk	78.2	115.5	194.7	199.4	222.8
52 Bashkir ASSR	58.4	91.6	154.9	187.4	166.8
53 Udmurt ASSR	60.3	101.3	182.0	202.2	212.5
54 Altai Krai	68.9	106.2	193.7	217.8	207.0
55 Kemerovo	83.2	119.2	218.8	241.2	235.3
56 Novosibirsk	71.7	123.2	193.2	205.3	220.3
57 Omsk	74.6	106.7	189.2	201.1	221.2
58 Tomsk	83.5	140.4	222.9	159.8	80.8
59 Tyumen	96.0	150.3	275.8	272.3	216.5
60 Krasnoyarski Krai	94.4	146.9	250.1	255.7	246.5
61 Irkutsk	90.0	145.3	251.6	244.1	224.0
62 Chita	76.7	123.1	209.2	215.8	138.7
63 Buryat ASSR	87.5	135.7	258.4	250.3	237.7
64 Tuva ASSR	85.6	132.6	223.9	140.6	99.0
65 Primorski Krai	111.6	154.7	252.6	246.5	248.2
66 Khabarovs Krai	107.8	156.0	231.1	261.1	224.9
67 Amur	95.6	148.3	262.9	236.4	168.5
68 Kamchatka	190.3	267.8	347.3	281.7	169.8
69 Magadan	201.7	267.6	344.5	285.5	231.6
70 Sakhalin	176.0	237.4	367.3	328.9	307.5
71 Yakut ASSR	134.8	198.9	277.9	264.4	188.8
72 Kaliningrad	92.9	145.3	234.4	237.2	259.1

Table A4. Russia. Consumption of Pure Alcohol, Liters

		1970	1980	1985	1989
1	Archangel	9.5	12.1	9.81	5.38
2	Vologda	11.8	12.2	9.23	6.56
3	Murmansk	8.0	11.4	10.06	5.41
4	Karelian ASSR	9.3	12.1	10.97	5.87
5	Komi ASSR	12.0	13.2	10.14	6.47
6	Leningrad - city	10.4	12.1	9.58	7.86
7	Leningrad	8.9	11.9	10.10	6.65
8	Novgorod	8.5	13.7	11.36	6.29
9	Pskov	8.6	12.8	10.56	4.87
10	Brayansk	6.0	8.4	8.53	3.81
11	Vladimir	8.2	10.9	9.92	5.80
12	Ivanov	7.5	10.0	8.66	5.59
13	Kalinin	8.5	12.2	10.86	6.32
14	Kaluga	7.7	10.5	8.97	4.71
15	Kostroma	7.9	11.6	10.63	5.93
16	Moscow	8.0	9.8	7.96	4.70
17	Orlov	7.0	10.5	9.26	5.53
18	Ryazan	7.3	10.1	8.91	5.33
19	Smolensk	8.7	11.3	11.04	5.24
20	Tula	7.1	9.4	9.26	4.88
21	Yaroslav	8.0	10.8	9.77	6.46
22	Gorkyi	8.3	9.7	9.20	5.94
23	Kirov	8.9	11.0	8.38	5.47
24	Maryi ASSR	6.2	8.0	8.95	4.93
25	Mordva ASSR	5.7	9.0	8.08	5.59
26	Chuvash ASSR	5.1	7.6	7.35	4.51
27	Belgorod	6.4	8.8	6.90	3.75
28	Voronezh	6.8	8.7	7.52	3.57
29	Kursk	5.0	8.2	7.76	4.66
30	Lipetsk	7.1	9.9	9.05	5.34
31	Tambov	7.4	10.3	9.21	5.13
32	Astrakhan	7.3	9.9	6.96	3.49
33	Volgograd	7.7	9.6	8.21	5.10
34	Kuybyshev	7.8	9.2	7.39	4.48
35	Penza	6.9	9.1	8.24	4.91
36	Saratov	7.6	9.6	8.08	4.22
37	Ulyanovsk	8.4	9.7	8.21	5.08
38	Kalmyk ASSR	8.8	10.3	7.29	4.05
39	Tatar ASSR	7.0	8.7	7.70	4.68
40	Krasnodar Krai	7.0	9.3	6.95	3.42
41	Stavropol Krai	8.1	9.5	7.09	3.43
42	Rostov	7.8	9.0	7.90	4.22
43	Dagestan ASSR	4.1	5.2	3.93	2.67
44	Kabardino-Balkar ASSR	6.2	9.3	6.36	3.81
45	North Ossetin ASSR	4.4	8.6	5.52	2.83
46	Checheno-Ingush ASSR	3.4	5.0	3.27	1.79
47	Kurgansk	8.3	10.2	8.21	4.04
48	Orenburg	7.1	9.1	5.80	3.59
49	Perm	8.5	10.6	9.04	5.22
50	Sverdlovsk	8.3	10.2	8.60	5.71
51	Chelyabinsk	8.0	9.9	8.22	5.40
52	Bashkir ASSR	6.4	8.0	8.03	4.00
53	Udmurt ASSR	7.1	9.1	8.28	5.40
54	Altai Krai	7.4	9.6	9.09	5.30
55	Kemerovo	8.0	10.6	9.49	5.54
56	Novosibirsk	8.0	10.5	8.47	5.25
57	Omsk	7.3	9.3	8.50	5.39
58	Tomsk	9.5	9.9	6.23	1.82
59	Tyumen	9.7	11.4	8.05	4.68
60	Krasnoyarski Krai	10.0	11.6	9.83	5.64
61	Irkutsk	8.6	10.0	8.27	4.57
62	Chita	8.3	9.9	8.27	3.04
63	Buryat ASSR	8.8	12.3	9.99	5.16
64	Tuva ASSR	8.8	10.8	6.01	2.09
65	Primorski Krai	10.2	12.0	9.75	5.92
66	Khabarovs Krai	10.8	12.1	9.76	5.08
67	Amur	10.0	12.7	9.61	4.01
68	Kamchatka	18.3	15.4	10.42	3.77
69	Magadan	20.3	15.6	9.61	5.38
70	Sakhalin	17.1	17.4	11.94	6.90
71	Yakut ASSR	16.9	13.4	8.88	3.95
72	Kaliningrad	10.1	11.5	10.63	6.55

Table A5. Russia. Consumption of Vodka, Liters

	1970	1980	1985	1989
1 Archangel	15.2	19.7	19.15	15.58
2 Vologda	16.4	17.9	17.90	15.58
3 Murmansk	13.8	19.2	19.33	16.05
4 Karelian ASSR	14.9	20.7	22.24	18.92
5 Komi ASSR	16.4	18.6	16.45	13.53
6 Leningrad - city	15.1	11.4	10.62	9.45
7 Leningrad	13.5	17.2	16.85	14.01
8 Novgorod	13.6	18.0	19.02	15.63
9 Pskov	11.6	16.9	18.83	14.88
10 Brayansk	8.2	11.4	9.65	8.42
11 Vladimir	12.5	15.3	15.17	13.20
12 Ivanov	11.9	15.3	15.55	12.93
13 Kalinin	13.0	15.8	15.72	14.18
14 Kaluga	13.3	16.0	14.51	13.36
15 Kostroma	12.7	18.9	18.69	16.74
16 Moscow	13.2	13.7	13.10	11.11
17 Orlov	11.2	14.8	12.10	10.07
18 Ryazan	14.1	17.1	15.77	14.16
19 Smolensk	12.7	16.5	16.35	13.95
20 Tula	11.5	13.3	11.79	10.26
21 Yaroslav	11.8	14.6	13.92	13.02
22 Gorkyi	11.3	14.1	13.87	12.96
23 Kirov	13.1	18.3	17.54	12.67
24 Maryi ASSR	7.5	12.5	13.94	11.23
25 Mordva ASSR	9.2	13.5	13.00	11.09
26 Chuvash ASSR	6.4	10.4	11.14	9.84
27 Belgorod	7.3	9.3	8.42	7.50
28 Voronezh	10.1	11.1	11.54	10.80
29 Kursk	7.3	9.7	9.25	7.99
30 Lipetsk	10.1	12.7	11.04	9.93
31 Tambov	11.1	15.1	13.96	12.44
32 Astrakhan	10.0	14.2	13.48	9.92
33 Volgograd	10.6	13.9	12.47	11.02
34 Kuybyshev	11.6	14.8	13.15	9.75
35 Penza	10.3	14.3	13.38	11.55
36 Saratov	11.2	14.3	13.11	11.07
37 Ulyanovsk	11.8	13.3	12.37	10.87
38 Kalmyk ASSR	11.0	15.1	13.83	10.98
39 Tatar ASSR	11.3	13.7	13.48	10.59
40 Krasnodar Krai	6.6	8.6	8.32	7.21
41 Stavropol Krai	8.0	9.3	9.34	8.01
42 Rostov	8.2	10.6	9.47	8.47
43 Dagestan ASSR	4.1	6.3	5.97	5.41
44 Kabardino-Balkar ASSR	6.1	9.3	9.68	9.34
45 North Ossetin ASSR	4.1	6.4	6.46	6.19
46 Checheno-Ingush ASSR	3.5	5.2	4.20	3.56
47 Kurgansk	10.2	13.1	12.91	11.14
48 Orenburg	11.1	16.8	13.61	8.05
49 Perm	12.0	17.6	15.91	13.48
50 Sverdlovsk	11.1	15.6	13.63	11.04
51 Chelyabinsk	10.4	15.3	13.61	11.14
52 Bashkir ASSR	9.8	12.6	13.45	11.87
53 Udmurt ASSR	10.0	13.8	12.76	10.63
54 Altai Krai	11.1	15.3	15.82	12.90
55 Kemerovo	12.7	19.3	16.86	13.95
56 Novosibirsk	11.5	15.4	13.64	11.17
57 Omsk	11.7	16.0	14.16	11.85
58 Tomsk	15.4	13.6	10.68	7.26
59 Tyumen	14.5	18.8	17.19	13.48
60 Krasnoyarski Krai	16.2	20.4	18.80	15.68
61 Irkutsk	13.0	17.1	14.74	12.27
62 Chita	14.2	18.1	16.49	13.15
63 Buryat ASSR	13.6	21.6	18.80	14.88
64 Tuva ASSR	17.3	16.8	13.41	7.54
65 Primorski Krai	16.3	20.2	17.77	14.86
66 Khabarovs Krai	14.7	15.9	14.23	11.23
67 Amur	15.6	20.0	19.36	14.50
68 Kamchatka	26.4	22.5	21.02	14.05
69 Magadan	22.7	19.9	16.44	9.93
70 Sakhalin	26.3	24.9	24.14	16.16
71 Yakut ASSR	26.8	18.9	18.16	12.46
72 Kaliningrad	17.1	15.9	13.27	11.40

Table A6. Russia. Consumption of Wine, Liters

	1970	1980	1984	1985	1989	1990	1991
1 Archangel	12.4	15.1	12.69	12.32	5.68	3.31	3.12
2 Vologda	7.6	11.5	15.39	15.88	4.33	2.91	3.23
3 Murmansk	18.5	17.0	10.60	8.50	7.76	4.60	3.12
4 Karelian ASSR	10.4	13.9	15.60	14.71	7.25	2.23	1.21
5 Komi ASSR	22.1	25.0	23.64	18.56	10.89	7.65	6.47
6 Leningrad - city	12.4	31.4	28.88	24.07	21.57	14.47	11.34
7 Leningrad	10.3	9.8	12.60	14.48	12.57	8.70	5.88
8 Novgorod	8.9	12.4	15.87	19.16	3.70	1.83	2.39
9 Pskov	10.5	12.1	19.35	20.40	5.10	2.07	3.46
10 Brayansk	10.8	9.8	12.15	13.48	6.47	3.74	2.10
11 Vladimir	14.0	14.6	17.18	17.08	5.07	3.24	1.49
12 Ivanov	11.0	11.6	12.39	11.82	5.89	3.63	2.09
13 Kalinin	10.3	14.8	14.42	15.01	9.05	6.50	4.58
14 Kaluga	9.9	9.8	9.04	7.61	6.09	2.85	2.52
15 Kostroma	10.0	9.8	11.15	11.25	3.42	1.11	1.30
16 Moscow	10.7	14.1	15.19	13.34	8.46	8.05	5.65
17 Orlov	7.9	8.9	15.42	15.72	10.04	8.70	5.59
18 Ryazan	5.9	8.3	9.60	8.78	6.03	4.41	0.74
19 Smolensk	14.9	13.3	20.59	20.67	6.66	3.30	3.37
20 Tula	9.9	11.6	16.53	16.93	9.21	6.25	3.85
21 Yaroslav	13.5	11.6	15.34	14.78	8.41	4.56	2.80
22 Gorkyi	11.3	13.4	16.57	12.80	7.59	5.93	3.94
23 Kirov	11.1	8.3	14.71	10.94	4.80	4.09	2.05
24 Maryi ASSR	12.7	8.3	12.80	10.09	5.30	2.99	2.60
25 Mordva ASSR	7.8	9.6	13.91	13.33	5.00	3.46	1.90
26 Chuvash ASSR	7.7	7.8	10.38	8.92	3.46	1.33	2.67
27 Belgorod	11.5	10.4	7.41	8.83	5.85	7.80	4.55
28 Voronezh	7.3	7.3	9.61	8.47	4.48	2.36	2.89
29 Kursk	7.0	7.6	10.19	10.56	5.36	2.40	1.20
30 Lipetsk	10.4	8.8	12.56	11.82	6.53	5.09	5.08
31 Tambov	10.8	11.7	12.85	11.28	5.77	4.64	2.05
32 Astrakhan	13.3	15.5	17.35	11.27	2.52	2.92	2.10
33 Volgograd	11.7	10.9	12.99	10.37	6.64	5.56	4.80
34 Kuybyshev	10.5	7.7	12.50	9.98	5.31	5.05	3.26
35 Penza	10.1	7.3	10.37	10.86	6.75	3.86	2.70
36 Saratov	11.2	7.4	10.99	10.72	6.69	4.87	3.60
37 Ulyanovsk	9.1	10.0	14.67	13.12	4.82	2.27	1.08
38 Kalmyk ASSR	17.5	17.1	16.38	12.53	4.52	6.18	2.35
39 Tatar ASSR	9.6	10.0	14.94	11.62	6.29	4.14	3.47
40 Krasnodar Krai	16.1	16.5	16.13	12.30	6.25	7.35	5.64
41 Stavropol Krai	19.8	14.7	15.45	12.08	6.03	6.32	4.11
42 Rostov	19.6	12.7	18.46	17.02	8.08	7.10	6.74
43 Dagestan ASSR	10.0	8.8	7.55	5.12	4.12	3.80	2.88
44 Kabardino-Balkar ASSR	12.3	9.6	12.87	8.91	6.12	7.58	6.33
45 North Ossetin ASSR	9.8	9.4	8.20	4.98	4.36	4.97	5.01
46 Checheno-Ingush ASSR	8.1	7.5	8.60	5.69	3.10	3.84	2.33
47 Kurgansk	10.9	13.2	15.47	16.01	5.69	3.28	3.59
48 Orenburg	9.7	7.1	14.44	8.65	4.44	1.24	1.35
49 Perm	12.9	11.1	15.88	13.79	6.28	4.65	4.72
50 Sverdlovsk	15.1	12.8	18.52	16.88	9.95	7.47	5.14
51 Chelyabinsk	14.5	12.0	15.83	13.41	8.70	7.07	6.97
52 Bashkir ASSR	7.3	7.0	12.30	10.44	4.69	3.73	3.48
53 Udmurt ASSR	11.1	10.6	16.10	16.04	9.72	6.56	4.40
54 Altai Krai	8.0	9.4	11.90	11.78	6.68	4.86	4.46
55 Kemerovo	10.7	10.4	21.88	17.69	7.84	6.78	7.05
56 Novosibirsk	11.4	10.2	15.79	15.61	6.57	4.62	4.34
57 Omsk	11.3	10.7	14.22	11.77	7.02	5.43	5.48
58 Tomsk	14.7	10.5	21.59	13.48	3.77	2.74	1.86
59 Tyumen	14.0	16.6	15.71	9.35	5.08	2.86	2.60
60 Krasnoyarski Krai	14.1	13.2	18.00	12.72	6.45	4.89	4.86
61 Irkutsk	14.1	13.9	19.84	13.48	4.79	3.20	2.39
62 Chita	12.4	12.9	17.32	13.92	4.93	2.97	1.70
63 Buryat ASSR	14.2	13.2	20.79	18.81	5.31	5.57	2.88
64 Tuva ASSR	10.3	21.7	22.04	13.41	3.08	2.77	1.26
65 Primorski Krai	13.7	16.3	18.04	12.84	6.74	5.66	6.19
66 Khabarovs Krai	15.1	19.7	21.14	20.88	8.63	9.85	8.28
67 Amur	11.1	14.9	15.91	12.51	5.20	5.55	3.64
68 Kamchatka	21.8	23.5	19.61	12.36	4.04	4.43	4.90
69 Magadan	30.1	27.5	22.07	19.56	8.02	6.97	3.27
70 Sakhalin	14.3	26.5	25.25	17.07	6.45	8.18	6.52
71 Yakut ASSR	20.1	24.4	25.42	15.19	7.41	6.47	3.60
72 Kaliningrad	8.9	16.4	25.26	25.36	12.30	7.12	4.17

Table A7. Russia. Consumption of Beer, Liters

	1970	1980	1985	1989
1 Archangel	13.3	18.4	16.89	8.42
2 Vologda	15.2	16.0	12.98	10.60
3 Murmansk	25.2	27.6	26.75	23.89
4 Karelian ASSR	16.9	13.9	15.74	9.84
5 Komi ASSR	21.0	18.8	31.44	25.95
6 Leningrad - city	34.6	39.6	33.97	27.20
7 Leningrad	27.1	34.0	29.24	21.29
8 Novgorod	18.6	41.4	36.98	30.42
9 Pskov	21.8	21.2	16.99	15.13
10 Brayansk	10.7	16.6	20.71	16.05
11 Vladimir	9.0	26.6	21.08	23.43
12 Ivanov	8.7	20.9	18.07	23.48
13 Kalinin	15.6	28.1	27.01	27.85
14 Kaluga	10.2	15.0	15.38	8.17
15 Kostroma	15.0	22.1	18.53	13.99

16	Moscow	11.5	17.8	15.81	11.54
17	Orlov	6.8	16.0	23.06	18.18
18	Ryazan	8.6	28.4	26.19	27.87
19	Smolensk	12.9	15.5	17.16	11.35
20	Tula	12.2	28.0	34.34	33.46
21	Yaroslav	12.2	29.3	26.28	38.00
22	Gorkyi	24.0	29.0	28.90	21.67
23	Kirov	25.0	21.2	19.24	16.28
24	Maryi ASSR	12.3	16.7	18.72	13.02
25	Mordva ASSR	8.9	13.1	15.46	42.34
26	Chuvash ASSR	10.9	23.9	28.58	31.05
27	Belgorod	13.1	15.0	23.46	15.75
28	Voronezh	20.1	24.3	21.91	15.87
29	Kursk	9.7	25.2	32.29	37.14
30	Lipetsk	10.1	34.7	42.54	34.49
31	Tambov	9.8	14.7	18.47	14.61
32	Astrakhan	16.6	15.1	13.70	7.57
33	Volgograd	21.7	32.5	34.98	37.60
34	Kuybyshev	21.3	28.0	31.31	27.86
35	Penza	13.3	19.0	21.03	14.69
36	Saratov	18.0	21.8	18.97	11.01
37	Ulyanovsk	19.3	18.5	21.87	18.12
38	Kalmyk ASSR	11.6	9.0	7.68	11.35
39	Tatar ASSR	11.6	17.5	27.85	22.71
40	Krasnodar Krai	23.4	30.5	30.36	21.55
41	Stavropol Krai	18.3	22.5	22.59	15.25
42	Rostov	17.8	25.7	26.16	21.54
43	Dagestan ASSR	8.3	14.0	14.76	9.38
44	Kabardino-Balkar ASSR	26.1	21.0	17.84	15.89
45	North Ossetin ASSR	17.0	33.5	26.77	22.10
46	Checheno-Ingush ASSR	10.4	8.8	11.09	7.97
47	Kurgansk	16.8	13.3	17.06	7.75
48	Orenburg	12.4	13.6	14.73	8.69
49	Perm	14.5	21.2	19.38	13.17
50	Sverdlovsk	16.7	20.2	21.10	16.48
51	Chelyabinsk	16.0	27.7	26.96	19.83
52	Bashkir ASSR	18.6	22.3	27.59	22.23
53	Udmurt ASSR	12.6	17.3	17.55	11.72
54	Altai Krai	15.6	22.1	32.01	37.38
55	Kemerovo	17.7	22.6	18.64	15.83
56	Novosibirsk	22.9	25.6	21.69	21.30
57	Omsk	10.3	13.1	25.76	26.69
58	Tomsk	14.1	13.1	11.64	5.75
59	Tyumen	12.8	10.1	13.57	9.10
60	Krasnoyarski Krai	16.0	21.8	25.47	21.15
61	Irkutsk	15.3	11.8	17.76	15.41
62	Chita	7.7	10.4	10.07	5.95
63	Buryat ASSR	13.2	9.9	9.25	6.79
64	Tuva ASSR	0.6	4.8	8.36	0.32
65	Primorski Krai	16.1	16.7	30.27	32.66
66	Khabarovs Krai	24.2	25.4	22.90	15.42
67	Amur	19.6	15.9	17.54	14.70
68	Kamchatka	19.1	36.3	40.87	28.10
69	Magadan	39.0	34.6	36.48	28.93
70	Sakhalin	42.9	47.8	38.52	43.89
71	Yakut ASSR	10.7	15.8	17.14	8.38
72	Kaliningrad	33.2	31.6	30.18	25.08

Table A8. Russia. Sales in State Retail Trade (All Trade)

		1965	1970	1980	1985	1989
1	Archangel	550	764	1181	1290	1496
2	Vologda	455	660	1036	1178	1388
3	Murmansk	721	880	1227	1323	1580
4	Karelian ASSR	565	772	1201	1333	1633
5	Komi ASSR	657	914	1379	1488	1787
6	Leningrad - city	823	1104	1528	1661	2045
7	Leningrad	506	700	1069	1149	1424
8	Novgorod	457	666	1062	1156	1398
9	Pskov	401	609	990	1113	1292
10	Brayansk	337	502	879	1051	1266
11	Vladimir	456	639	975	1109	1292
12	Ivanov	488	673	1016	1146	1385
13	Kalinin	450	649	1012	1119	1326
14	Kaluga	397	582	943	1087	1284
15	Kostroma	427	632	1055	1232	1449
16	Moscow	476	627	952	1048	1301
17	Orlov	360	546	898	1083	1331
18	Ryazan	382	578	933	1087	1245
19	Smolensk	425	619	976	1143	1327
20	Tula	462	625	972	1122	1286
21	Yaroslav	484	670	1017	1155	1361
22	Gorkyi	444	637	1009	1192	1400
23	Kirov	406	608	985	1079	1312
24	Maryi ASSR	315	497	848	994	1209
25	Mordva ASSR	288	450	823	992	1206
26	Chuvash ASSR	287	441	816	1010	1241
27	Belgorod	315	485	839	1052	1247
28	Voronezh	391	550	868	1040	1216
29	Kursk	310	475	829	1059	1232
30	Lipetsk	351	531	893	1080	1312
31	Tambov	330	491	819	1004	1196
32	Astrakhan	439	610	965	1101	1302
33	Volgograd	477	632	942	1101	1321
34	Kuybyshev	472	664	967	1095	1352
35	Penza	356	530	874	1038	1237
36	Saratov	455	609	927	1097	1273
37	Ulyanovsk	372	572	892	1104	1334
38	Kalmyk ASSR	396	544	868	999	1233
39	Tatar ASSR	372	543	925	1078	1299
40	Krasnodar Krai	448	621	995	1146	1392
41	Stavropol Krai	445	615	997	1140	1353
42	Rostov	459	626	970	1108	1287
43	Dagestan ASSR	245	348	576	699	851
44	Kabardino-Balkar ASSR	367	521	861	1000	1191
45	North Ossetin ASSR	401	554	913	994	1204
46	Checheno-Ingush ASSR	294	401	619	686	818
47	Kurgansk	393	578	967	1104	1305
48	Orenburg	384	549	933	1029	1204
49	Perm	460	642	1013	1141	1322
50	Sverdlovsk	526	697	1046	1189	1409
51	Chelyabinsk	498	656	1009	1146	1367
52	Bashkir ASSR	350	495	842	1041	1209
53	Udmurt ASSR	389	579	943	1093	1296
54	Altai Krai	389	556	954	1171	1371
55	Kemerovo	495	666	1078	1297	1528
56	Novosibirsk	440	622	991	1134	1412
57	Omsk	447	617	996	1176	1400
58	Tomsk	480	709	1120	1220	1393
59	Tyumen	485	744	1379	1556	1835
60	Krasnoyarski Krai	516	742	1158	1332	1560
61	Irkutsk	503	734	1154	1278	1545
62	Chita	424	592	898	1018	1217
63	Buryat ASSR	458	640	1059	1175	1432
64	Tuva ASSR	404	600	929	1026	1193
65	Primorski Krai	597	814	1238	1347	1736
66	Khabarovs Krai	609	830	1223	1374	1757
67	Amur	493	713	1179	1251	1518
68	Kamchatka	877	1185	1646	1739	1998
69	Magadan	1096	1431	1852	1854	2227
70	Sakhalin	834	1094	1625	1704	2106
71	Yakut ASSR	753	1036	1494	1663	1927
72	Kaliningrad	505	723	1085	1210	1464

Table A9. Russia. Sales of Food Products in Retail Trade, Rubles

	1965	1970	1980	1985	1989
1 Archangel	370	490	704	755	852
2 Vologda	301	425	630	705	790
3 Murmansk	472	550	704	742	862
4 Karelian ASSR	381	493	723	774	862
5 Komi ASSR	427	569	783	813	930
6 Leningrad - city	497	608	813	852	1013
7 Leningrad	340	441	607	627	727
8 Novgorod	290	407	614	669	768
9 Pskov	248	372	578	646	695
10 Brayansk	204	305	488	580	658
11 Vladimir	307	410	565	638	710
12 Ivanov	319	426	587	665	746
13 Kalinin	288	404	585	643	717
14 Kaluga	254	362	542	614	675
15 Kostroma	276	394	610	711	788
16 Moscow	320	397	519	545	613
17 Orlov	205	314	489	568	687
18 Ryazan	246	358	524	597	665
19 Smolensk	269	383	564	645	721
20 Tula	320	428	599	671	479
21 Yaroslav	285	397	572	669	755
22 Gorkyi	285	397	572	669	755
23 Kirov	261	381	572	607	713
24 Maryi ASSR	194	306	489	572	672
25 Mordva ASSR	172	270	471	550	657
26 Chuvash ASSR	167	257	460	549	644
27 Belgorod	165	261	427	503	597
28 Voronezh	211	298	435	515	569
29 Kursk	165	252	428	527	608
30 Lipetsk	210	309	487	568	683
31 Tambov	197	293	468	556	637
32 Astrakhan	260	357	524	572	648
33 Volgograd	271	357	497	564	655
34 Kuybyshev	284	385	538	581	669
35 Penza	213	308	484	562	664
36 Saratov	264	351	508	578	622
37 Ulyanovsk	220	332	492	576	696
38 Kalmyk ASSR	215	302	444	476	552
39 Tatar ASSR	224	323	504	569	662
40 Krasnodar Krai	243	337	499	552	636
41 Stavropol Krai	232	317	477	513	586
42 Rostov	254	342	491	547	597
43 Dagestan ASSR	134	190	287	340	399
44 Kabardino-Balkar ASSR	197	285	415	469	530
45 North Ossetin ASSR	211	288	440	469	538
46 Checheno-Ingush ASSR	162	215	301	325	357
47 Kurgansk	224	331	509	561	638
48 Orenburg	216	305	486	495	582
49 Perm	298	406	604	666	743
50 Sverdlovsk	337	432	611	671	752
51 Chelyabinsk	315	407	573	625	729
52 Bashkir ASSR	207	289	453	545	599
53 Udmurt ASSR	238	350	536	613	703
54 Altai Krai	220	312	487	571	663
55 Kemerovo	311	408	608	689	766
56 Novosibirsk	260	362	523	584	685
57 Omsk	265	360	537	607	708
58 Tomsk	289	416	600	597	627
59 Tyumen	296	436	745	821	889
60 Krasnoyarski Krai	320	447	648	715	796
61 Irkutsk	314	447	634	682	770
62 Chita	256	357	495	546	556
63 Buryat ASSR	282	393	600	637	737
64 Tuva ASSR	234	327	484	470	496
65 Primorski Krai	381	493	689	733	840
66 Khabarovs Krai	382	501	678	752	834
67 Amur	301	419	640	643	705
68 Kamchatka	363	732	895	912	906
69 Magadan	714	868	1019	1000	1069
70 Sakhalin	546	670	928	932	1068
71 Yakut ASSR	497	635	819	866	888
72 Kaliningrad	307	425	577	647	753

Table A10. Russia. Sales of Nonfood Products in Retail Trade, Rubles

		1965	1970	1980	1985	1989
1	Archangel	180	274	477	535	644
2	Vologda	154	235	406	473	598
3	Murmansk	249	330	523	581	718
4	Karelian ASSR	184	279	478	559	771
5	Komi ASSR	230	345	596	675	857
6	Leningrad - city	326	496	715	809	1032
7	Leningrad	166	259	462	522	697
8	Novgorod	167	259	448	487	630
9	Pskov	153	237	412	467	597
10	Brayansk	133	197	391	471	608
11	Vladimir	149	229	410	471	582
12	Ivanov	169	247	429	481	639
13	Kalinin	162	245	427	476	609
14	Kaluga	143	220	401	473	609
15	Kostroma	151	238	445	521	661
16	Moscow	156	230	433	503	688
17	Orlov	155	232	409	515	644
18	Ryazan	136	220	409	490	580
19	Smolensk	156	236	412	498	606
20	Tula	142	197	373	451	807
21	Yaroslav	199	273	445	486	606
22	Gorkyi	159	240	437	523	645
23	Kirov	145	227	413	472	599
24	Maryi ASSR	121	191	359	422	537
25	Mordva ASSR	116	180	352	442	549
26	Chuvash ASSR	120	184	356	461	597
27	Belgorod	150	224	412	549	650
28	Voronezh	180	252	433	525	647
29	Kursk	145	223	401	532	624
30	Lipetsk	141	222	406	512	629
31	Tambov	133	198	351	448	559
32	Astrakhan	179	253	441	529	654
33	Volgograd	206	275	445	537	666
34	Kuybyshev	188	279	429	514	683
35	Penza	143	222	390	476	573
36	Saratov	191	258	419	519	651
37	Ulyanovsk	152	240	400	528	638
38	Kalmyk ASSR	181	242	424	523	681
39	Tatar ASSR	148	220	421	509	637
40	Krasnodar Krai	205	284	496	594	756
41	Stavropol Krai	213	298	520	627	767
42	Rostov	205	284	479	561	690
43	Dagestan ASSR	111	158	289	359	452
44	Kabardino-Balkar ASSR	170	236	446	531	661
45	North Ossetin ASSR	190	266	473	525	666
46	Checheno-Ingush ASSR	132	186	318	361	461
47	Kurgansk	169	247	458	543	667
48	Orenburg	168	244	447	534	622
49	Perm	162	236	409	475	579
50	Sverdlovsk	189	265	435	518	657
51	Chelyabinsk	183	249	436	521	638
52	Bashkir ASSR	143	206	389	496	610
53	Udmurt ASSR	151	229	407	480	593
54	Altai Krai	169	244	467	600	708
55	Kemerovo	184	258	470	608	762
56	Novosibirsk	180	260	468	550	727
57	Omsk	182	257	459	569	692
58	Tomsk	191	293	520	623	766
59	Tyumen	189	308	634	735	946
60	Krasnoyarski Krai	196	295	510	617	764
61	Irkutsk	189	287	520	596	775
62	Chita	168	235	403	472	661
63	Buryat ASSR	176	247	459	538	695
64	Tuva ASSR	170	273	445	556	697
65	Primorski Krai	216	321	549	614	896
66	Khabarovs Krai	227	329	545	622	923
67	Amur	192	294	539	608	813
68	Kamchatka	514	453	751	827	1092
69	Magadan	382	563	833	854	1158
70	Sakhalin	288	424	697	772	1038
71	Yakut ASSR	256	401	675	797	1039
72	Kaliningrad	198	298	508	563	711

Table A11. Russia. Public Dining in State Retail Trade. Rubles

		1965	1970	1980	1985	1989
1	Archangel	52	74	108	113	127
2	Vologda	42	66	104	111	127
3	Murmansk	76	97	125	127	143
4	Karelian ASSR	47	67	99	109	129
5	Komi ASSR	65	90	123	136	150
6	Leningrad - city	75	103	133	146	160
7	Leningrad	34	53	78	80	94
8	Novgorod	39	59	91	98	112
9	Pskov	34	54	81	89	98
10	Brayansk	29	43	74	88	102
11	Vladimir	42	61	94	102	113
12	Ivanov	50	70	102	107	122
13	Kalinin	43	62	82	88	101
14	Kaluga	34	52	80	86	97
15	Kostroma	39	62	102	112	127

16 Moscow	43	54	70	74	81
17 Orlov	28	44	72	85	99
18 Ryazan	35	49	69	75	82
19 Smolensk	33	51	83	95	111
20 Tula	41	60	100	113	124
21 Yaroslav	49	72	109	114	130
22 Gorkyi	46	67	101	109	116
23 Kirov	45	69	99	106	115
24 Maryi ASSR	31	54	92	101	109
25 Mordva ASSR	23	37	68	81	96
26 Chuvash ASSR	32	52	86	103	117
27 Belgorod	26	43	68	81	94
28 Voronezh	31	47	64	72	80
29 Kursk	25	39	67	82	98
30 Lipetsk	33	57	97	108	116
31 Tambov	27	41	67	83	95
32 Astrakhan	39	52	75	82	96
33 Volgograd	44	59	79	86	96
34 Kuybyshev	53	75	107	117	135
35 Penza	29	46	73	82	91
36 Saratov	45	62	85	96	103
37 Ulyanovsk	30	47	74	84	91
38 Kalmyk ASSR	25	39	53	65	83
39 Tatar ASSR	35	54	92	104	114
40 Krasnodar Krai	47	66	95	106	120
41 Stavropol Krai	37	55	76	84	98
42 Rostov	45	63	100	108	118
43 Dagestan ASSR	22	31	50	58	69
44 Kabardino-Balkar ASSR	41	58	85	93	101
45 North Ossetin ASSR	45	67	108	103	119
46 Checheno-Ingush ASSR	28	40	52	57	63
47 Kurgansk	33	52	82	92	104
48 Orenburg	35	49	78	90	97
49 Perm	50	73	114	121	135
50 Sverdlovsk	60	82	119	125	140
51 Chelyabinsk	62	81	109	117	130
52 Bashkir ASSR	30	46	77	87	98
53 Udmurt ASSR	45	66	96	104	114
54 Altai Krai	34	49	81	95	109
55 Kemerovo	49	69	106	112	126
56 Novosibirsk	47	68	95	100	115
57 Omsk	43	61	98	110	124
58 Tomsk	38	60	93	103	115
59 Tyumen	37	61	133	146	165
60 Krasnoyarski Krai	48	69	106	116	128
61 Irkutsk	42	62	93	111	127
62 Chita	34	49	67	72	87
63 Buryat ASSR	33	56	84	91	108
64 Tuva ASSR	30	42	57	65	71
65 Primorski Krai	62	86	102	104	119
66 Khabarovs Krai	61	91	114	115	129
67 Amur	45	68	90	91	108
68 Kamchatka	82	103	120	130	152
69 Magadan	136	180	172	167	180
70 Sakhalin	99	126	165	156	169
71 Yakut ASSR	71	95	125	136	144
72 Kaliningrad	43	67	97	111	128

Table A12. Russia. Consumer Services, Rubles

	1965	1970	1980	1985	1989
1 Archangel	7.75	13.71	28.81	35.66	53.89
2 Vologda	7.80	15.34	31.48	37.71	56.56
3 Murmansk	13.53	22.09	41.12	49.18	67.06
4 Karelian ASSR	9.39	15.97	31.01	37.73	55.18
5 Komi ASSR	9.24	18.91	38.25	50.28	72.05
6 Leningrad - city	21.77	29.77	45.54	53.60	80.12
7 Leningrad	5.73	11.86	27.23	33.43	49.29
8 Novgorod	7.63	15.76	31.49	37.71	52.32
9 Pskov	5.78	12.74	28.65	32.84	49.18
10 Brayansk	4.88	11.65	29.51	35.92	51.90
11 Vladimir	7.34	15.97	29.07	35.52	52.24
12 Ivanov	11.22	20.97	36.81	41.46	55.25
13 Kalinin	8.44	16.05	30.81	34.71	47.51
14 Kaluga	5.34	11.78	30.08	37.15	49.40
15 Kostroma	7.29	14.77	30.67	41.02	55.98
16 Moscow	6.67	13.72	26.73	32.48	56.04
17 Orlov	4.47	11.07	27.44	33.62	54.88
18 Ryazan	4.75	10.38	26.61	32.56	47.08
19 Smolensk	5.50	13.13	28.02	36.30	52.85
20 Tula	5.83	14.73	29.19	31.15	45.12
21 Yaroslav	8.81	18.85	38.68	45.00	62.76
22 Gorkyi	7.84	16.70	29.93	35.20	50.68
23 Kirov	7.16	14.59	30.33	37.42	49.65
24 Maryi ASSR	5.23	11.45	24.43	28.85	44.70
25 Mordva ASSR	3.81	10.51	28.03	36.17	55.87
26 Chuvash ASSR	3.37	9.21	22.03	30.73	49.53
27 Belgorod	5.30	12.26	28.26	34.42	52.83
28 Voronezh	6.10	11.59	26.48	32.85	47.87
29 Kursk	4.26	10.18	24.30	31.71	47.52
30 Lipetsk	4.40	12.31	27.82	34.31	48.76
31 Tambov	4.76	11.77	25.11	31.32	44.12
32 Astrakhan	7.16	13.19	29.32	38.18	59.85
33 Volgograd	9.14	14.88	28.76	34.38	50.83
34 Kuybyshev	7.90	15.23	30.27	38.68	58.69

35 Penza	5.56	10.60	26.81	34.84	51.82
36 Saratov	8.33	14.46	27.48	36.70	53.05
37 Ulyanovsk	6.89	14.05	26.24	34.08	50.12
38 Kalmyk ASSR	3.58	8.30	19.92	24.51	40.82
39 Tatar ASSR	5.76	12.15	26.86	33.74	58.00
40 Krasnodar Krai	10.61	18.95	36.18	42.51	63.65
41 Stavropol Krai	8.32	16.64	33.77	41.88	59.17
42 Rostov	8.85	16.06	33.63	40.58	58.28
43 Dagestan ASSR	3.12	7.63	14.85	19.67	30.13
44 Kabardino-Balkar ASSR	8.37	19.03	39.57	45.35	61.22
45 North Ossetin ASSR	11.12	20.13	40.47	49.22	65.95
46 Checheno-Ingush ASSR	4.50	8.93	20.08	23.57	35.71
47 Kurgansk	6.74	13.55	33.13	37.90	55.60
48 Orenburg	6.04	12.40	28.90	34.85	51.71
49 Perm	7.11	13.46	29.36	35.11	50.37
50 Sverdlovsk	9.73	18.63	32.93	37.77	53.55
51 Chelyabinsk	7.54	15.25	30.45	35.83	52.96
52 Bashkir ASSR	4.89	10.96	30.34	42.00	60.68
53 Udmurt ASSR	6.55	13.94	30.83	38.70	56.69
54 Altai Krai	5.43	12.45	31.15	39.59	56.55
55 Kemerovo	7.82	15.79	32.14	36.15	50.41
56 Novosibirsk	8.93	16.89	31.18	35.06	48.11
57 Omsk	8.76	16.77	31.74	37.36	57.71
58 Tomsk	7.90	14.21	31.53	37.67	54.39
59 Tyumen	6.69	12.84	29.90	33.87	49.93
60 Krasnoyarski Krai	7.09	14.80	31.65	37.40	56.11
61 Irkutsk	7.23	15.31	29.45	35.42	51.79
62 Chita	5.40	10.01	20.37	24.37	38.99
63 Buryat ASSR	6.35	13.60	23.41	28.82	44.35
64 Tuva ASSR	4.07	9.27	18.50	23.09	31.83
65 Primorski Krai	9.38	17.19	30.75	35.25	52.63
66 Khabarovs Krai	9.43	18.08	34.08	39.47	59.70
67 Amur	6.57	13.99	28.65	35.48	55.66
68 Kamchatka	12.95	28.72	55.28	62.60	84.84
69 Magadan	20.61	38.76	63.74	70.88	93.15
70 Sakhalin	10.25	18.95	43.83	51.48	69.94
71 Yakut ASSR	7.21	17.34	35.96	46.19	68.08
72 Kaliningrad	8.86	16.23	35.27	42.48	55.72

Table A13. Russia. Consumption of Bread in Kg

	1965	1970	1980	1985	1989
1 Archangel	154	144	125	107	106
2 Vologda	187	162	136	126	123
3 Murmansk	99	80	75	69	72
4 Karelian ASSR	144	135	114	105	106
5 Komi ASSR	128	127	125	107	110
6 Leningrad - city	112	100	95	92	102
7 Leningrad	138	137	123	113	116
8 Novgorod	184	164	138	130	125
9 Pskov	187	170	142	129	129
10 Brayansk	192	181	153	148	135
11 Vladimir	179	157	136	117	114
12 Ivanov	193	171	139	122	120
13 Kalinin	185	169	143	117	107
14 Kaluga	167	147	132	116	112
15 Kostroma	189	179	159	135	125
16 Moscow	140	117	111	101	101
17 Orlov	176	164	142	141	136
18 Ryazan	171	154	136	142	140
19 Smolensk	191	185	143	122	113
20 Tula	177	158	141	102	98
21 Yaroslav	166	147	136	109	106
22 Gorkyi	190	157	138	123	122
23 Kirov	189	180	147	130	111
24 Maryi ASSR	170	159	130	137	123
25 Mordva ASSR	184	174	157	128	121
26 Chuvash ASSR	177	168	148	141	130
27 Belgorod	190	166	134	131	130
28 Voronezh	161	137	117	126	119
29 Kursk	199	180	155	157	143
30 Lipetsk	168	154	143	124	132
31 Tambov	164	153	136	144	135
32 Astrakhan	144	137	119	125	120
33 Volgograd	136	133	116	115	108
34 Kuybyshev	147	136	117	106	100
35 Penza	151	151	132	108	102
36 Saratov	138	131	119	115	106
37 Ulyanovsk	165	155	137	145	129
38 Kalmyk ASSR	129	104	136	121	127
39 Tatar ASSR	163	146	127	134	131
40 Krasnodar Krai	162	153	131	144	131
41 Stavropol Krai	134	124	122	117	111
42 Rostov	143	145	128	115	115
43 Dagestan ASSR	169	155	138	152	145
44 Kabardino-Balkar ASSR	141	123	113	110	102
45 North Ossetin ASSR	130	138	121	93	84
46 Checheno-Ingush ASSR	128	127	117	103	91
47 Kurgansk	154	157	144	119	114
48 Orenburg	138	136	121	134	118
49 Perm	173	160	139	119	119
50 Sverdlovsk	160	148	119	105	95
51 Chelyabinsk	139	131	121	122	110
52 Bashkir ASSR	174	162	136	131	116
53 Udmurt ASSR	193	179	148	157	147

54 Altai Krai	153	144	129	141	141
55 Kemerovo	150	139	123	123	118
56 Novosibirsk	146	138	123	127	123
57 Omsk	143	131	128	136	133
58 Tomsk	148	136	128	134	127
59 Tyumen	144	133	122	114	117
60 Krasnoyarski Krai	156	152	125	113	109
61 Irkutsk	151	145	123	110	107
62 Chita	156	159	132	110	105
63 Buryat ASSR	139	151	124	132	124
64 Tuva ASSR	190	175	142	140	123
65 Primorski Krai	174	159	135	112	109
66 Khabarovs Krai	168	169	131	113	112
67 Amur	174	171	136	131	133
68 Kamchatka	128	114	105	96	94
69 Magadan	118	116	105	99	105
70 Sakhalin	153	152	130	114	119
71 Yakut ASSR	139	134	114	106	106
72 Kaliningrad	144	129	124	117	113

Table A14. Russia. Delivery of Fish to State Retail Trade in Kg

	1965	1970	1980	1985	1989
1 Archangel	21.5	27.0	27.6	23.0	28.8
2 Vologda	15.7	21.5	15.7	15.9	15.3
3 Murmansk	29.8	32.1	48.5	56.7	34.9
4 Karelian ASSR	18.6	21.7	25.3	19.9	21.9
5 Komi ASSR	16.6	19.7	17.3	15.0	13.8
6 Leningrad - city	15.3	16.6	16.7	17.2	15.2
7 Leningrad	10.7	13.2	12.1	12.6	12.6
8 Novgorod	13.6	17.1	17.5	17.5	16.1
9 Pskov	12.4	14.9	15.8	16.0	16.7
10 Brayansk	14.8	17.3	18.6	21.1	15.8
11 Vladimir	13.3	15.9	12.8	12.3	12.2
12 Ivanov	11.5	15.9	14.2	15.2	13.5
13 Kalinin	11.9	15.3	13.3	13.5	10.0
14 Kaluga	11.7	13.8	14.3	13.6	13.6
15 Kostroma	12.1	17.2	20.5	21.7	19.7
16 Moscow	13.0	13.1	12.9	11.6	12.8
17 Orlov	12.9	18.2	17.7	17.2	14.1
18 Ryazan	12.8	18.7	15.4	16.2	14.0
19 Smolensk	12.0	13.1	16.3	16.9	15.5
20 Tula	15.3	16.4	15.3	15.7	15.1
21 Yaroslav	10.3	14.0	14.1	14.2	13.2
22 Gorkyi	10.9	15.9	15.6	15.7	13.5
23 Kirov	11.8	17.7	17.5	19.3	14.6
24 Maryi ASSR	9.1	12.5	15.5	15.9	12.8
25 Mordva ASSR	12.1	16.8	21.2	18.1	13.7
26 Chuvash ASSR	9.5	12.9	15.9	16.7	11.4
27 Belgorod	10.3	15.9	17.0	13.6	12.9
28 Voronezh	9.9	14.2	14.5	13.2	13.0
29 Kursk	10.9	14.5	21.3	18.0	13.6
30 Lipetsk	12.8	17.7	16.3	16.5	16.1
31 Tambov	13.4	17.1	17.1	15.6	12.4
32 Astrakhan	8.6	13.2	19.3	21.3	32.8
33 Volgograd	8.5	10.6	12.0	11.9	11.6
34 Kuybyshev	10.4	12.4	11.7	13.2	12.4
35 Penza	12.4	16.0	15.4	15.9	12.3
36 Saratov	9.6	12.6	14.4	12.8	12.1
37 Ulyanovsk	10.5	15.7	14.6	15.0	9.7
38 Kalmyk ASSR	3.7	5.1	5.6	4.8	9.1
39 Tatar ASSR	7.2	11.3	14.4	13.5	11.4
40 Krasnodar Krai	8.9	11.1	16.0	11.8	12.2
41 Stavropol Krai	7.2	9.2	7.8	10.3	10.0
42 Rostov	7.7	11.0	16.0	14.8	14.5
43 Dagestan ASSR	2.3	3.3	4.2	5.3	5.1
44 Kabardino-Balkar ASSR	6.1	7.6	5.9	6.4	6.1
45 North Ossetin ASSR	7.7	9.0	11.3	10.7	9.4
46 Checheno-Ingush ASSR	5.7	6.5	5.6	6.5	6.9
47 Kurgansk	7.0	11.8	18.1	13.6	9.9
48 Orenburg	6.9	9.7	9.8	12.8	8.0
49 Perm	11.0	15.4	16.5	16.3	13.6
50 Sverdlovsk	11.1	15.0	13.7	14.7	13.3
51 Chelyabinsk	10.3	13.1	13.0	13.3	11.0
52 Bashkir ASSR	6.3	8.8	11.9	11.2	8.2
53 Udmurt ASSR	10.4	15.5	18.8	18.9	12.5
54 Altai Krai	7.3	10.9	12.7	10.9	9.1
55 Kemerovo	10.9	14.6	15.7	14.9	11.8
56 Novosibirsk	10.4	11.8	12.5	11.6	10.1
57 Omsk	8.5	10.1	12.7	12.4	10.5
58 Tomsk	11.6	16.4	15.1	15.0	11.1
59 Tyumen	10.1	14.9	17.8	13.1	10.4
60 Krasnoyarski Krai	10.4	13.6	13.6	14.9	11.0
61 Irkutsk	9.4	12.7	14.1	15.4	12.3
62 Chita	6.6	8.3	6.5	8.5	11.0
63 Buryat ASSR	8.9	11.3	12.1	13.0	11.7
64 Tuva ASSR	5.2	5.6	6.7	8.6	7.0
65 Primorski Krai	19.0	17.4	25.1	30.3	32.3
66 Khabarovs Krai	15.3	16.8	16.9	17.7	21.2
67 Amur	12.9	14.7	17.4	15.1	18.3
68 Kamchatka	19.0	21.4	24.7	14.4	45.1
69 Magadan	12.2	9.1	24.9	16.1	19.2
70 Sakhalin	19.1	18.1	17.4	23.4	28.1
71 Yakut ASSR	13.2	14.9	14.3	15.3	8.7
72 Kaliningrad	15.9	18.1	39.1	28.3	26.5

Table A15. Russia. Delivery of Eggs to State Retail Trade (units)

	1965	1970	1980	1985	1989
1 Archangel	50	69	231	258	260
2 Vologda	19	111	235	263	266
3 Murmansk	114	145	240	245	200
4 Karelian ASSR	45	116	269	261	242
5 Komi ASSR	62	91	262	254	237
6 Leningrad - city	214	240	248	247	231
7 Leningrad	85	155	251	238	235
8 Novgorod	20	65	190	223	237
9 Pskov	20	29	157	187	235
10 Brayansk	18	30	130	176	180
11 Vladimir	35	48	193	222	206
12 Ivanov	33	82	247	254	241
13 Kalinin	33	61	204	232	236
14 Kaluga	20	57	175	188	177
15 Kostroma	21	49	200	254	270
16 Moscow	70	94	188	198	182
17 Orlov	22	29	137	160	172
18 Ryazan	15	42	148	190	187
19 Smolensk	18	40	114	178	190
20 Tula	42	70	195	199	198
21 Yaroslav	42	62	197	243	247
22 Gorkyi	45	60	184	221	240
23 Kirov	17	59	197	210	226
24 Maryi ASSR	20	73	177	194	184
25 Mordva ASSR	14	36	138	161	174
26 Chuvash ASSR	12	20	130	156	161
27 Belgorod	27	46	108	134	139
28 Voronezh	23	42	115	144	153
29 Kursk	17	25	123	144	132
30 Lipetsk	33	85	149	162	146
31 Tambov	14	49	129	161	162
32 Astrakhan	20	28	110	180	197
33 Volgograd	30	35	143	167	162
34 Kuybyshev	37	57	177	189	204
35 Penza	22	40	158	173	176
36 Saratov	27	53	159	180	164
37 Ulyanovsk	23	56	159	182	174
38 Kalmyk ASSR	13	32	101	110	125
39 Tatar ASSR	21	35	131	175	178
40 Krasnodar Krai	43	54	104	127	87
41 Stavropol Krai	40	50	112	122	132
42 Rostov	36	43	117	155	158
43 Dagestan ASSR	10	19	75	117	137
44 Kabardino-Balkar ASSR	24	43	113	156	140
45 North Ossetin ASSR	19	32	117	165	148
46 Checheno-Ingush ASSR	12	35	94	115	101
47 Kurgansk	27	33	149	167	175
48 Orenburg	18	32	136	158	148
49 Perm	43	64	189	226	247
50 Sverdlovsk	62	98	239	251	261
51 Chelyabinsk	60	76	172	189	197
52 Bashkir ASSR	22	30	111	131	145
53 Udmurt ASSR	23	52	165	202	220
54 Altai Krai	21	29	125	131	142
55 Kemerovo	41	69	208	229	226
56 Novosibirsk	37	75	181	208	195
57 Omsk	24	56	188	241	242
58 Tomsk	53	91	249	258	257
59 Tyumen	36	91	254	284	318
60 Krasnoyarski Krai	51	85	198	227	232
61 Irkutsk	46	77	200	239	264
62 Chita	25	56	154	168	191
63 Buryat ASSR	18	46	154	182	239
64 Tuva ASSR	23	17	76	133	180
65 Primorski Krai	43	74	191	206	236
66 Khabarovs Krai	46	81	219	230	236
67 Amur	37	77	200	219	226
68 Kamchatka	101	137	277	267	234
69 Magadan	99	280	332	285	252
70 Sakhalin	72	105	211	219	213
71 Yakut ASSR	72	86	206	199	238
72 Kaliningrad	30	45	186	238	246

Table A16. Russia. Consumption of Sugar in Kg

	1965	1970	1980	1985	1989
1 Archangel	44.3	48.2	52.4	51.7	53.6
2 Vologda	44.3	51.6	52.6	49.6	55.4
3 Murmansk	40.9	43.0	42.7	42.1	46.3
4 Karelian ASSR	43.5	45.5	49.5	46.3	51.1
5 Komi ASSR	38.3	41.8	47.2	44.6	50.3
6 Leningrad - city	41.5	41.2	41.8	40.9	45.6
7 Leningrad	42.6	44.1	45.4	44.8	44.9
8 Novgorod	43.7	50.0	54.3	47.9	53.6
9 Pskov	36.3	43.8	59.2	46.5	52.4
10 Brayansk	33.7	42.6	56.9	55.2	68.4
11 Vladimir	39.8	45.3	50.0	49.2	55.1
12 Ivanov	40.2	45.0	48.0	49.4	56.3
13 Kalinin	42.6	48.4	53.9	48.5	56.5
14 Kaluga	32.8	42.5	46.0	46.5	56.2
15 Kostroma	42.5	46.8	50.8	49.1	60.2

16 Moscow	42.2	41.1	41.2	40.0	44.9
17 Orlov	33.3	46.0	60.3	58.3	62.2
18 Ryazan	35.5	40.0	50.4	46.4	60.3
19 Smolensk	33.9	38.4	46.4	45.6	55.6
20 Tula	39.1	41.7	51.9	49.6	57.9
21 Yaroslav	42.5	44.0	49.8	46.1	54.1
22 Gorkyi	38.3	44.2	50.3	46.5	52.0
23 Kirov	37.3	41.9	46.8	45.1	50.1
24 Maryi ASSR	29.8	35.7	46.9	46.9	51.0
25 Mordva ASSR	30.4	38.4	50.9	51.8	55.3
26 Chuvash ASSR	27.8	33.8	44.9	45.7	50.2
27 Belgorod	32.6	43.2	54.9	51.3	52.3
28 Voronezh	32.5	41.0	48.6	47.0	49.5
29 Kursk	33.1	44.7	61.2	62.7	57.2
30 Lipetsk	31.8	39.2	49.7	47.0	56.5
31 Tambov	34.0	44.5	48.6	47.1	52.4
32 Astrakhan	43.0	42.2	50.1	48.4	53.6
33 Volgograd	38.7	39.8	47.0	41.9	50.7
34 Kuybyshev	37.2	42.4	43.0	42.2	46.8
35 Penza	34.9	43.9	53.2	47.0	50.1
36 Saratov	38.3	43.0	49.8	41.9	48.8
37 Ulyanovsk	34.8	45.8	47.1	43.7	50.3
38 Kalmyk ASSR	26.4	26.9	34.2	32.0	38.0
39 Tatar ASSR	37.3	45.3	50.8	49.7	55.7
40 Krasnodar Krai	37.0	41.1	47.4	48.6	49.7
41 Stavropol Krai	35.1	37.9	43.3	43.5	45.8
42 Rostov	36.2	39.0	42.6	39.4	44.8
43 Dagestan ASSR	23.0	26.3	34.7	36.2	41.5
44 Kabardino-Balkar ASSR	30.0	31.1	39.7	37.0	42.9
45 North Ossetin ASSR	33.1	35.6	42.5	40.1	44.7
46 Checheno-Ingush ASSR	27.5	31.3	38.0	38.5	40.9
47 Kurgansk	31.4	38.5	45.5	41.4	48.9
48 Orenburg	31.7	38.5	44.1	44.4	48.8
49 Perm	36.8	45.0	49.0	46.3	51.3
50 Sverdlovsk	39.1	42.6	46.9	45.0	49.9
51 Chelyabinsk	36.0	41.1	45.4	45.3	48.5
52 Bashkir ASSR	32.9	40.4	44.2	45.3	52.2
53 Udmurt ASSR	34.5	40.9	49.5	44.5	47.5
54 Altai Krai	31.6	41.2	37.8	41.8	48.8
55 Kemerovo	34.1	43.9	46.5	42.3	48.3
56 Novosibirsk	34.5	39.4	43.7	41.0	48.2
57 Omsk	33.4	39.2	48.1	46.7	51.6
58 Tomsk	38.7	46.1	51.2	50.9	53.4
59 Tyumen	36.3	42.2	52.7	46.9	62.8
60 Krasnoyarski Krai	34.9	39.4	46.6	43.6	48.3
61 Irkutsk	33.9	37.8	43.1	41.8	45.0
62 Chita	31.1	32.4	38.8	37.6	46.4
63 Buryat ASSR	30.2	34.0	39.6	37.0	40.7
64 Tuva ASSR	25.1	25.4	37.5	38.3	42.2
65 Primorski Krai	37.5	46.1	44.6	47.1	55.0
66 Khabarovs Krai	36.9	44.0	48.4	46.9	57.6
67 Amur	34.1	39.8	50.2	50.7	54.4
68 Kamchatka	41.1	47.9	51.8	52.0	63.1
69 Magadan	44.2	51.6	50.6	50.0	54.7
70 Sakhalin	36.7	41.9	46.1	45.1	54.9
71 Yakut ASSR	40.4	46.3	47.9	54.7	55.8
72 Kaliningrad	39.7	43.9	45.5	45.9	49.4

Table A17. Russia. Delivery of Meat to State Retail Trade in Kg

	1965	1970	1980	1985	1989
1 Archangel	26.6	34.2	40.1	46.9	47.6
2 Vologda	17.1	24.4	33.2	44.5	45.2
3 Murmansk	47.6	50.7	57.3	63.1	69.7
4 Karelian ASSR	28.3	37.5	43.5	46.5	46.3
5 Komi ASSR	32.8	42.4	56.0	59.2	63.9
6 Leningrad - city	62.8	73.9	94.8	96.8	100.7
7 Leningrad	21.8	25.8	33.0	33.0	35.6
8 Novgorod	10.8	17.0	18.9	23.3	27.6
9 Pskov	7.1	14.9	17.3	21.6	29.5
10 Brayansk	9.3	16.2	16.9	22.8	36.9
11 Vladimir	15.1	21.3	28.6	37.5	37.5
12 Ivanov	19.7	26.9	34.8	41.5	47.7
13 Kalinin	11.7	17.8	19.4	23.6	25.5
14 Kaluga	8.4	15.0	16.0	21.3	27.0
15 Kostroma	10.5	17.8	21.2	27.6	28.1
16 Moscow	20.4	22.6	22.8	27.6	33.6
17 Orlov	7.0	13.2	15.1	20.9	33.9
18 Ryazan	8.8	14.7	18.0	24.1	30.7
19 Smolensk	9.0	15.6	17.8	24.1	28.5
20 Tula	20.1	28.3	36.4	43.9	45.8
21 Yaroslav	18.8	23.2	29.9	35.1	35.3
22 Gorkyi	19.8	26.3	32.5	44.2	45.3
23 Kirov	12.4	17.2	23.8	29.0	33.3
24 Maryi ASSR	9.3	16.8	21.3	27.8	34.6
25 Mordva ASSR	5.6	10.8	13.6	18.8	26.7
26 Chuvash ASSR	6.5	12.4	20.6	29.0	32.9
27 Belgorod	7.0	9.7	15.3	38.0	39.1
28 Voronezh	14.4	13.0	17.3	1.9	32.8
29 Kursk	6.8	9.1	14.3	22.0	29.1
30 Lipetsk	11.5	17.5	24.0	31.3	44.5
31 Tambov	8.4	10.0	15.1	21.3	29.4
32 Astrakhan	13.5	22.9	20.5	29.6	29.7
33 Volgograd	21.5	23.5	24.8	31.8	54.7
34 Kuybyshev	22.4	31.2	38.3	45.2	51.8

35 Penza	10.2	14.6	19.0	24.2	40.0
36 Saratov	18.6	20.4	21.6	28.4	40.5
37 Ulyanovsk	12.7	22.7	24.3	30.7	46.0
38 Kalmyk ASSR	6.8	12.2	13.1	17.1	22.0
39 Tatar ASSR	13.3	19.3	24.3	28.8	38.2
40 Krasnodar Krai	15.6	20.0	24.8	34.0	39.3
41 Stavropol Krai	14.4	16.7	22.5	28.3	35.3
42 Rostov	18.9	21.5	23.1	28.2	33.2
43 Dagestan ASSR	6.9	9.7	14.8	18.9	20.9
44 Kabardino-Balkar ASSR	13.4	18.1	20.4	26.7	31.0
45 North Ossetin ASSR	13.6	17.6	24.2	31.6	36.8
46 Checheno-Ingush ASSR	10.1	15.3	18.0	21.1	19.8
47 Kurgansk	10.0	15.6	16.0	22.3	27.8
48 Orenburg	13.8	17.2	20.6	25.6	35.1
49 Perm	23.0	28.2	36.2	43.4	44.8
50 Sverdlovsk	31.2	37.0	48.7	56.7	59.0
51 Chelyabinsk	27.6	32.7	42.9	49.9	55.1
52 Bashkir ASSR	11.8	16.1	21.2	26.3	30.0
53 Udmurt ASSR	13.5	22.4	27.7	33.6	39.2
54 Altai Krai	11.3	16.2	17.8	22.6	34.9
55 Kemerovo	25.6	32.4	46.6	52.0	56.1
56 Novosibirsk	23.1	28.5	30.6	36.5	47.1
57 Omsk	19.5	26.1	27.9	32.1	34.4
58 Tomsk	25.7	30.5	39.9	45.9	47.6
59 Tyumen	17.5	25.7	47.2	56.2	57.7
60 Krasnoyarski Krai	25.0	31.9	37.4	45.1	47.5
61 Irkutsk	26.8	33.2	40.6	45.3	49.0
62 Chita	17.1	22.4	27.7	35.8	40.7
63 Buryat ASSR	19.1	23.7	33.2	39.3	44.7
64 Tuva ASSR	16.8	20.0	20.5	26.2	27.8
65 Primorski Krai	25.4	32.0	44.4	47.5	51.5
66 Khabarovs Krai	28.7	32.6	48.4	53.1	54.3
67 Amur	17.4	22.4	33.8	40.8	44.8
68 Kamchatka	55.4	62.5	68.1	75.7	65.8
69 Magadan	73.4	83.2	84.6	88.5	89.4
70 Sakhalin	47.0	49.8	62.2	63.0	65.2
71 Yakut ASSR	55.0	75.0	68.8	70.9	74.3
72 Kaliningrad	24.6	35.5	36.7	43.2	47.4

Table A18. Russia. Delivery of Milk to State Retail Trade in Kg

	1965	1970	1980	1985	1989
1 Archangel	208	268	293	293	341
2 Vologda	149	235	252	260	301
3 Murmansk	237	267	343	328	387
4 Karelian ASSR	212	268	315	298	348
5 Komi ASSR	196	195	286	273	362
6 Leningrad - city	350	356	471	491	508
7 Leningrad	168	256	266	266	296
8 Novgorod	117	180	186	196	237
9 Pskov	86	143	160	176	209
10 Brayansk	95	137	175	190	280
11 Vladimir	148	229	217	249	281
12 Ivanov	157	237	230	227	312
13 Kalinin	154	216	189	196	264
14 Kaluga	97	160	145	174	248
15 Kostroma	128	180	230	227	257
16 Moscow	179	208	186	191	248
17 Orlov	60	133	138	180	295
18 Ryazan	105	176	189	217	303
19 Smolensk	119	172	166	189	255
20 Tula	138	200	210	249	304
21 Yaroslav	188	264	258	262	281
22 Gorkyi	133	196	226	261	304
23 Kirov	108	172	208	211	276
24 Maryi ASSR	70	127	156	179	281
25 Mordva ASSR	55	100	133	166	234
26 Chuvash ASSR	59	102	151	192	255
27 Belgorod	60	117	156	195	284
28 Voronezh	92	160	171	200	275
29 Kursk	71	120	136	180	257
30 Lipetsk	84	141	182	218	282
31 Tambov	80	117	143	190	243
32 Astrakhan	131	196	200	222	280
33 Volgograd	147	202	214	220	285
34 Kuybyshev	163	215	241	253	294
35 Penza	81	134	157	194	279
36 Saratov	135	192	212	242	286
37 Ulyanovsk	89	142	183	214	274
38 Kalmyk ASSR	64	107	129	119	219
39 Tatar ASSR	113	171	205	215	305
40 Krasnodar Krai	133	226	244	265	317
41 Stavropol Krai	131	193	223	234	316
42 Rostov	139	192	222	218	255
43 Dagestan ASSR	67	110	148	153	199
44 Kabardino-Balkar ASSR	113	176	200	198	281
45 North Ossetin ASSR	144	211	256	253	296
46 Checheno-Ingush ASSR	94	128	171	163	186
47 Kurgansk	107	151	152	169	248
48 Orenburg	107	145	180	186	247
49 Perm	143	198	232	241	284
50 Sverdlovsk	190	228	273	299	366
51 Chelyabinsk	174	227	258	256	322
52 Bashkir ASSR	107	142	183	198	254
53 Udmurt ASSR	126	171	231	232	300

54 Altai Krai	106	141	163	169	252
55 Kemerovo	152	212	262	260	356
56 Novosibirsk	171	216	251	239	321
57 Omsk	143	195	218	209	295
58 Tomsk	190	254	282	268	329
59 Tyumen	123	179	299	305	386
60 Krasnoyarski Krai	168	209	243	242	320
61 Irkutsk	187	230	256	245	325
62 Chita	135	186	204	195	302
63 Buryat ASSR	158	183	213	206	284
64 Tuva ASSR	97	113	156	150	220
65 Primorski Krai	150	225	276	257	342
66 Khabarovs Krai	172	250	279	262	347
67 Amur	111	160	216	233	323
68 Kamchatka	284	343	354	348	395
69 Magadan	303	485	391	344	440
70 Sakhalin	261	308	351	334	383
71 Yakut ASSR	371	400	383	349	399
72 Kaliningrad	187	275	242	276	334

Table A19. Ukraine. Money Income of the Population

	1970	1975	1980	1985	1990
	739.4	972.4	1201.9	1442.4	2141.8
1 Vinnitskaya ob	561.8	782.5	978.3	1277.4	1909.2
2 Volynskaya ob	564.2	746.0	983.0	1255.7	1891.6
3 Dnepropetrovskaya ob	862.4	1093.5	1326.0	1538.5	2234.6
4 Donetskaya ob	872.3	1100.0	1345.5	1573.5	2234.4
5 Zhitomirskaya ob	561.7	819.9	1017.6	1320.9	2017.4
6 Zakarpatskaya ob	572.7	774.2	1024.2	1215.4	1724.2
7 Zaporozhskaya ob	847.8	1106.2	1311.1	1537.5	2284.1
8 Ivano-Frankovskaya	505.6	729.1	969.9	1218.2	1777.1
9 Kievskaya ob	556.9	802.3	1044.3	1297.4	2075.0
10 Kiev (city)	1069.3	1472.1	1672.9	1766.0	2886.9
11 Kirovogradskaya ob	695.7	919.5	1175.1	1466.3	2164.1
12 Krymskaya ob	951.2	1155.6	1356.4	1531.3	2320.0
13 Luganskaya ob	857.8	1084.5	1332.2	1591.1	2195.5
14 L'vovskaya ob	664.7	891.3	1141.8	1370.2	1994.7
15 Nikolayevskaya ob	780.8	1000.4	1240.3	1496.9	2237.3
16 Odesskaya ob	791.6	992.8	1221.3	1411.4	2186.3
17 Poltavskaya ob	690.0	933.6	1205.1	1506.8	2151.1
18 Rovenskaya ob	546.8	758.3	944.6	1178.1	1814.8
19 Sumskaya ob	634.6	880.5	1107.9	1402.1	2006.1
20 Ternopol'skaya ob	513.9	754.5	957.0	1208.1	1875.0
21 Khar'kovskaya ob	868.0	1112.3	1317.8	1543.9	2287.3
22 Khersonskaya ob	783.9	1038.2	1218.0	1431.7	2148.3
23 Khmel'nitskaya ob	528.3	778.9	991.6	1288.0	1931.5
24 Cherkasskaya ob	636.0	862.3	1084.0	1403.2	2055.6
25 Chernovitskaya ob	546.8	755.7	941.9	1173.3	1769.9
26 Chernigovskaya ob	571.0	829.2	1058.7	1308.4	1939.3

Table A20. Ukraine. Bank Savings, End of 1989

1 Vinnitskaya ob	1580.2
2 Volynskaya ob	1309.2
3 Dnepropetrovskaya ob	1407.6
4 Donetskaya ob	1387.1
5 Zhitomirskaya ob	1508.8
6 Zakarpatskaya ob	1041.4
7 Zaporozhskaya ob	1475.5
8 Ivano-Frankovskaya	1162.9
9 Kievskaya ob	1595.9
10 Kiev (city)	1574.2
11 Kirovogradskaya ob	1461.3
12 Krymskaya ob	1457.7
13 Luganskaya ob	1360.3
14 L'vovskaya ob	1327.3
15 Nikolayevskaya ob	1352.4
16 Odesskaya ob	1496.8
17 Poltavskaya ob	1704.1
18 Rovenskaya ob	1099.4
19 Sumskaya ob	1514.0
20 Ternopol'skaya ob	1310.1
21 Khar'kovskaya ob	1472.3
22 Khersonskaya ob	1357.2
23 Khmel'nitskaya ob	1467.1
24 Cherkasskaya ob	1729.9
25 Chernovitskaya ob	887.2
26 Chernigovskaya ob	1822.0

Table A21. Ukraine. Sales of Alcoholic Beverages in Rubles and Consumption of Pure Alcohol in Liters

	1980	1985	1990	1970	1989
	Liters	Liters	Liters	Rubles	Rubles
1 Vinnitskaya ob	3.8	2.9	2.3	5.40	80.96
2 Volynskaya ob	5.5	4.8	3.4	6.72	128.32
3 Dnepropetrovskaya ob	6.2	5.2	4.1	9.22	140.87
4 Donetskaya ob	7.0	5.9	4.9	10.28	168.11
5 Zhitomirskaya ob	4.3	3.8	2.8	5.52	97.29
6 Zakarpatskaya ob	8.4	8.0	5.8	8.81	185.14
7 Zaporozhskaya ob	7.9	6.5	4.5	10.25	158.88
8 Ivano-Frankovskaya	5.2	5.1	4	6.15	159.29
9 Kievskaya ob	4.0	3.4	2.3	5.68	73.24
10 Kiev (city)	7.2	5.1	5.6	11.57	197.67
11 Kirovogradskaya ob	5.5	4.6	3.1	6.96	110.75
12 Krymskaya ob	10.3	7.7	5.2	15.32	180.16
13 Luganskaya ob	7.0	5.7	4.6	10.60	178.21
14 L'vovskaya ob	5.8	5.4	4.9	7.95	175.99
15 Nikolayevskaya ob	8.0	6.7	3.3	9.11	111.38
16 Odesskaya ob	6.8	5.0	4	9.76	120.14
17 Poltavskaya ob	6.0	5.2	3.9	7.94	146.00
18 Rovenskaya ob	4.8	4.4	3	6.61	103.39
19 Sumskaya ob	5.8	5.4	3.9	6.64	138.99
20 Ternopol'skaya ob	4.1	4.1	3.5	6.01	106.35
21 Khar'kovskaya ob	7.1	5.4	4.4	11.03	164.68
22 Khersonskaya ob	8.3	6.2	4.7	10.38	142.58
23 Khmel'nitskaya ob	4.2	3.4	2.3	5.58	85.45
24 Cherkasskaya ob	4.5	3.4	2.8	5.87	95.94
25 Chernovitskaya ob	4.9	4.1	2.9	6.26	102.21
26 Chernigovskaya ob	7.3	5.9	4.3	7.43	158.65

Table A22. Ukraine. Sales in State Retail Trade

	1970	1975	1980	1985	1989
1 Vinnitskaya ob	434.8	580.3	731.5	929.9	1144.0
2 Volynskaya ob	423.9	579.4	745.9	900.1	1134.4
3 Dnepropetrovskaya ob	594.5	785.5	956.4	1100.1	1274.0
4 Donetskaya ob	631.3	815.1	988.5	1129.2	1374.2
5 Zhitomirskaya ob	437.9	597.9	732.7	887.1	1112.2
6 Zakarpatskaya ob	471.1	679.2	857.2	1014.6	1286.3
7 Zaporozhskaya ob	607.7	819.6	1007.1	1144.0	1389.6
8 Ivano-Frankovskaya	391.3	582.3	753.9	912.1	1147.5
9 Kievskaya ob	408.5	558.5	712.6	841.2	1045.0
10 Kiev (city)	952.0	1293.5	1544.5	1649.4	2039.5
11 Kirovogradskaya ob	509.1	659.6	807.3	974.8	1172.7
12 Krymskaya ob	739.8	1035.6	1223.4	1313.4	1583.3
13 Luganskaya ob	639.2	801.3	976.8	1140.5	1370.5
14 L'vovskaya ob	517.4	708.7	908.9	1051.8	1318.7
15 Nikolayevskaya ob	551.6	759.5	938.0	1118.2	1336.2
16 Odesskaya ob	603.1	794.0	957.7	1065.4	1315.3
17 Poltavskaya ob	511.5	679.4	845.4	1010.0	1224.9
18 Rovenskaya ob	402.3	577.9	726.6	869.4	1079.9
19 Sumskaya ob	489.8	642.9	791.6	964.0	1181.2
20 Ternopol'skaya ob	395.1	537.3	689.3	854.1	1096.5
21 Khar'kovskaya ob	649.7	836.9	997.6	1128.0	1349.6
22 Khersonskaya ob	568.8	794.7	940.5	1084.8	1327.6
23 Khmel'nitskaya ob	420.6	585.2	739.8	909.4	1133.9
24 Cherkasskaya ob	492.1	658.7	807.1	987.8	1235.7
25 Chernovitskaya ob	475.3	632.6	796.0	937.3	1164.7
26 Chernigovskaya ob	455.8	614.6	777.8	912.5	1142.5

Table A23. Ukraine. Sales of Food and Nonfood Products in State Trade

	1970 Food	1985 Food	1989 Food	1970 Nonfood	1985 Nonfood	1989 Nonfood
1 Vinnitskaya ob	203	378	465	222	552	683
2 Volynskaya ob	220	412	500	218	488	620
3 Dnepropetrovskaya ob	338	509	569	291	591	701
4 Donetskaya ob	371	557	642	287	572	737
5 Zhitomirskaya ob	218	397	489	207	490	622
6 Zakarpatskaya ob	268	502	591	232	513	671
7 Zaporozhskaya ob	341	536	611	301	608	772
8 Ivano-Frankovskaya	219	437	527	188	475	604
9 Kievskaya ob	204	367	426	213	474	605
10 Kiev (city)	469	773	905	454	876	1117
11 Kirovogradskaya ob	246	427	480	264	547	687
12 Krymskaya ob	476	672	764	347	641	799
13 Luganskaya ob	360	556	637	293	585	730
14 L'vovskaya ob	290	517	613	243	535	691
15 Nikolayevskaya ob	297	504	554	281	614	771
16 Odesskaya ob	327	496	572	308	570	738
17 Poltavskaya ob	262	457	532	256	553	682
18 Rovenskaya ob	212	392	476	205	477	605
19 Sumskaya ob	240	452	533	231	512	646
20 Ternopol'skaya ob	198	376	472	202	478	617
21 Khar'kovskaya ob	366	535	612	312	593	731
22 Khersonskaya ob	313	491	575	292	594	748
23 Khmel'nitskaya ob	203	381	436	210	528	667
24 Cherkasskaya ob	233	394	482	264	594	753
25 Chernovitskaya ob	222	401	481	268	536	672
26 Chernigovskaya ob	233	429	520	213	483	625

Table A24. Ukraine. State Public Dining

	1970	1975	1985	1989
1 Vinnitskaya ob	43.70	56.3	78.5	90.7
2 Volynskaya ob	57.00	69.9	89.5	105.2
3 Dnepropetrovskaya ob	70.40	86.8	108.0	117.7
4 Donetskaya ob	65.62	78.8	102.1	114.6
5 Zhitomirskaya ob	45.38	64.0	81.7	90.6
6 Zakarpatskaya ob	73.15	94.2	130.9	153.3
7 Zaporozhskaya ob	73.60	91.6	111.5	126.7
8 Ivano-Frankovskaya	57.94	76.3	105.9	124.5
9 Kievskaya ob	38.26	47.4	60.0	75.8
10 Kiev (city)	82.93	110.5	119.8	137.4
11 Kirovogradskaya ob	50.17	64.1	85.0	98.9
12 Krymskaya ob	89.13	102.8	99.6	110.0
13 Luganskaya ob	67.82	80.1	107.9	120.9
14 L'vovskaya ob	69.27	89.0	114.8	129.3
15 Nikolayevskaya ob	56.69	71.0	88.1	96.9
16 Odesskaya ob	69.16	85.8	105.6	115.8
17 Poltavskaya ob	51.90	68.6	90.4	101.5
18 Rovenskaya ob	52.95	66.6	85.9	97.7
19 Sumskaya ob	45.76	59.9	77.9	89.2
20 Ternopol'skaya ob	51.45	64.4	80.2	99.4
21 Khar'kovskaya ob	74.00	87.1	105.7	117.2
22 Khersonskaya ob	61.41	73.8	82.5	94.8
23 Khmel'nitskaya ob	43.13	59.0	82.1	92.3
24 Cherkasskaya ob	50.32	66.8	79.0	91.4
25 Chernovitskaya ob	57.54	73.6	94.4	114.9
26 Chernigovskaya ob	37.40	47.6	66.7	80.0

Table A25. Ukraine. State Consumer Services

	1970	1975	1980	1985	1990
	16.8	27.2	30.5	38.6	57.4
1 Vinnitskaya ob	10.5	20.9	24.0	33.4	50.0
2 Volynskaya ob	12.1	20.4	25.0	32.9	52.0
3 Dnepropetrovskaya ob	17.5	27.3	32.4	39.9	61.2
4 Donetskaya ob	15.6	25.6	29.8	35.9	52.0
5 Zhitomirskaya ob	14.4	27.1	27.5	36.7	52.8
6 Zakarpatskaya ob	13.4	21.3	23.0	31.9	57.0
7 Zaporozhskaya ob	20.0	33.2	36.5	44.8	60.1
8 Ivano-Frankovskaya	13.0	23.4	26.9	36.7	54.0
9 Kievskaya ob	10.5	26.7	26.1	33.4	53.6
10 Kiev (city)	29.8	45.4	51.1	60.4	86.2
11 Kirovogradskaya ob	14.5	27.0	31.4	38.2	58.5
12 Krymskaya ob	26.6	38.0	41.6	48.0	62.5
13 Luganskaya ob	17.6	26.1	30.7	35.3	51.6
14 L'vovskaya ob	19.1	30.0	32.5	40.7	56.0
15 Nikolayevskaya ob	16.6	30.0	30.5	39.4	58.3
16 Odesskaya ob	19.0	29.8	32.7	39.5	62.3
17 Poltavskaya ob	16.1	27.3	27.0	37.4	55.8
18 Rovenskaya ob	11.8	19.2	22.2	29.6	49.7
19 Sumskaya ob	11.4	19.6	20.5	29.6	49.7
20 Ternopol'skaya ob	12.4	22.2	26.7	37.4	55.2
21 Khar'kovskaya ob	21.3	30.0	36.0	42.8	61.1
22 Khersonskaya ob	15.6	27.5	31.4	38.1	60.5
23 Khmel'nitskaya ob	10.4	19.8	20.8	38.8	51.1
24 Cherkasskaya ob	12.4	21.3	25.0	34.3	57.8
25 Chernovitskaya ob	18.8	29.3	30.6	37.8	57.4
26 Chernigovskaya ob	13.2	24.1	23.4	33.3	48.6

Table A26. Ukraine. Sales of Sugar, Meat, Sausages in State Trade, Rubles

	Sugar 1970	Sugar 1989	Meat 1970	Meat 1989	Sausage 1970	Sausage 1989
1 Vinnitskaya ob	17.92	25.60	11.71	32.78	10.51	45.73
2 Volynskaya ob	17.65	22.74	13.22	33.46	12.22	36.66
3 Dnepropetrovskaya ob	24.87	23.15	29.08	60.64	26.12	50.88
4 Donetskaya ob	25.29	22.80	31.78	56.59	29.94	64.17
5 Zhitomirskaya ob	22.31	22.74	10.22	36.33	10.20	39.56
6 Zakarpatskaya ob	16.96	21.61	16.11	40.18	9.51	29.49
7 Zaporozhskaya ob	25.50	24.03	25.42	53.03	23.65	52.35
8 Ivano-Frankovskaya	19.45	22.75	10.14	30.74	10.40	35.96
9 Kievskaya ob	24.41	23.20	10.44	35.79	7.59	33.13
10 Kiev (city)	18.42	22.25	48.85	99.45	49.45	107.13
11 Kirovogradskaya ob	23.90	24.33	15.75	41.91	12.66	36.52
12 Krymskaya ob	21.26	23.15	43.44	78.99	29.26	57.72
13 Luganskaya ob	25.52	22.61	30.03	57.21	28.11	63.72
14 L'vovskaya ob	22.07	21.44	18.93	45.21	17.86	49.04
15 Nikolayevskaya ob	20.81	24.52	24.22	51.36	18.18	48.92
16 Odesskaya ob	20.74	25.10	28.05	52.30	22.07	40.05
17 Poltavskaya ob	22.91	23.55	14.59	33.13	12.34	37.24
18 Rovenskaya ob	16.59	22.05	11.71	29.43	10.92	34.85
19 Sumskaya ob	24.46	23.85	10.76	32.02	11.67	35.89
20 Ternopol'skaya ob	14.51	24.72	10.16	24.77	13.59	42.13
21 Khar'kovskaya ob	22.36	23.63	32.17	48.93	23.76	58.69
22 Khersonskaya ob	24.21	23.07	22.99	44.46	15.22	46.55
23 Khmel'nitskaya ob	17.85	23.52	11.93	31.86	10.99	44.56
24 Cherkasskaya ob	23.55	24.53	14.61	37.12	12.03	38.21
25 Chernovitskaya ob	17.11	22.58	13.20	36.82	12.96	30.19
26 Chernigovskaya ob	23.11	23.28	8.54	29.47	9.61	28.11

Table A27. Ukraine. Sales of Butter, Milk, Fish and Eggs in State Retail Trade in Rubles

	Butter 1970	Butter 1989	Milk 1970	Milk 1989	Fish 1970	Fish 1989	Eggs 1970	Eggs 1989
1 Vinnitskaya ob	7.32	14.49	8.67	19.39	8.09	10.78	0.83	5.98
2 Volynskaya ob	5.03	16.42	9.07	22.59	5.14	8.63	1.19	7.10
3 Dnepropetrovskaya ob	14.37	19.65	26.29	32.05	8.91	11.39	5.56	12.80
4 Donetskaya ob	13.80	23.06	28.93	36.94	10.97	14.83	7.93	17.12
5 Zhitomirskaya ob	9.04	17.27	9.54	26.60	7.55	10.97	0.68	7.57
6 Zakarpatskaya ob	5.29	8.66	13.53	21.67	3.19	5.76	1.76	12.71
7 Zaporozhskaya ob	12.98	21.40	23.66	33.30	10.76	14.98	3.55	13.19
8 Ivano-Frankovskaya	7.45	13.22	12.36	22.86	3.22	7.13	1.24	8.47
9 Kievskaya ob	8.30	17.17	8.64	25.86	6.99	10.06	0.95	7.98
10 Kiev (city)	19.68	35.69	33.20	50.80	13.20	18.34	11.04	18.58
11 Kirovogradskaya ob	9.32	17.85	14.76	24.34	8.21	9.65	1.83	7.32
12 Krymskaya ob	18.46	25.33	36.00	44.93	12.61	19.27	10.68	16.31
13 Luganskaya ob	13.04	24.39	25.58	34.90	8.72	12.56	6.72	14.74
14 L'vovskaya ob	11.85	20.48	19.48	28.93	5.06	8.26	2.42	10.62
15 Nikolayevskaya ob	11.88	22.33	16.58	25.65	8.72	13.14	3.40	10.68
16 Odesskaya ob	12.88	20.72	18.71	27.35	10.67	15.05	4.63	13.50
17 Poltavskaya ob	9.45	14.63	15.91	26.72	7.88	12.44	1.96	8.07
18 Rovenskaya ob	5.52	13.63	8.61	22.83	5.42	10.33	0.67	8.40
19 Sumskaya ob	7.93	14.24	11.69	27.64	10.12	14.32	0.99	8.14
20 Ternopol'skaya ob	6.94	11.16	8.30	21.24	3.84	6.83	0.66	4.75
21 Khar'kovskaya ob	14.33	20.04	24.49	36.18	10.66	13.53	5.29	14.09
22 Khersonskaya ob	10.60	18.07	18.19	29.21	9.85	14.30	2.71	9.03
23 Khmel'nitskaya ob	7.69	12.39	7.32	18.95	6.02	7.70	0.81	5.61
24 Cherkasskaya ob	8.73	15.58	13.32	27.20	8.54	11.33	1.65	7.52
25 Chernovitskaya ob	7.40	12.92	12.83	22.29	4.75	6.62	1.51	9.44
26 Chernigovskaya ob	7.72	12.34	8.35	21.54	8.19	11.02	1.07	7.24

APPENDIX B.

SUMMARY OF REGRESSION RESULTS WITH MONEY INCOME AS THE INDEPENDENT VARIABLE

Table B1. Russia (N=72)

1. Savings

Year	1965	Year	1970
Constant	-12.1830	Constant	32.38444
Std Err of Y Est	19.37277	Std Err of Y Est	44.69112
R Squared	0.821021	R Squared	0.678790
X Coefficient(s)	0.169257	X Coefficient(s)	0.199204
Std Err of Coef.	0.009445	Std Err of Coef.	0.016378

Year	1980	Year	1985
Constant	333.9105	Constant	522.7727
Std Err of Y Est	130.1418	Std Err of Y Est	190.7247
R Squared	0.304397	R Squared	0.165177
X Coefficient(s)	0.201517	X Coefficient(s)	0.188074
Std Err of Coef.	0.036410	Std Err of Coef.	0.050536

Year	1989	Year	1990
Constant	743.5917	Constant	926.8595
Std Err of Y Est	245.5567	Std Err of Y Est	299.0457
R Squared	0.228071	R Squared	0.157466
X Coefficient(s)	0.237953	X Coefficient(s)	0.202041
Std Err of Coef.	0.052323	Std Err of Coef.	0.055858

Year	1991
Constant	1354.973
Std Err of Y Est	411.2812
R Squared	0.112484
X Coefficient(s)	0.112913
Std Err of Coef.	0.037908

2. Sales of Alcoholic Beverages in State Retail Trade in Rubles

Year	1965	Year	1970
Constant	10.73223	Constant	22.41607
Std Err of Y Est	10.21496	Std Err of Y Est	14.85626
R Squared	0.884064	R Squared	0.857041
X Coefficient(s)	0.115066	X Coefficient(s)	0.111534
Std Err of Coef.	0.004980	Std Err of Coef.	0.005444

Year	1980	Year	1985
Constant	60.90156	Constant	92.70058
Std Err of Y Est	29.81681	Std Err of Y Est	35.12406
R Squared	0.670509	R Squared	0.439165
X Coefficient(s)	0.099562	X Coefficient(s)	0.068904
Std Err of Coef.	0.008341	Std Err of Coef.	0.009306

Year	1989	Year	1990
Constant	142.4878	Constant	172.4235
Std Err of Y Est	48.28454	Std Err of Y Est	53.88400
R Squared	0.099992	R Squared	0.057784
Coefficient(s)	0.028691	X Coefficient(s)	0.020854
Err of Coef.	0.010288	Std Err of Coef.	0.010064

Year	1991
Constant	221.2884
Std Err of Y Est	85.27027
R Squared	0.071217
X Coefficient(s)	0.018240
Std Err of Coef.	0.007873

3. Consumption of 100% Alcohol in Liters

Year	1970	Year	1980
Constant	1.034987	Constant	4.928378
Std Err of Y Est	0.963425	Std Err of Y Est	1.255045
R Squared	0.887799	R Squared	0.620851
X Coefficient(s)	0.008309	X Coefficient(s)	0.003759
Std Err of Coef.	0.000353	Std Err of Coef.	0.000351

Year	1985	Year	1989
Constant	5.832961	Constant	3.767246
Std Err of Y Est	1.436355	Std Err of Y Est	1.167955
R Squared	0.203154	R Squared	0.054292
X Coefficient(s)	0.001607	X Coefficient(s)	0.000498
Std Err of Coef.	0.000380	Std Err of Coef.	0.000248

Year	1990	Year	1991
Constant	4.056300	Constant	4.396636
Std Err of Y Est	1.141030	Std Err of Y Est	1.334794
R Squared	0.065890	R Squared	0.019757
X Coefficient(s)	0.000473	X Coefficient(s)	0.000146
Std Err of Coef.	0.000213	Std Err of Coef.	0.000123

4. Consumption of Vodka in Liters

Year	1970	Year	1980
Constant	2.300209	Constant	6.912178
Std Err of Y Est	2.580547	Std Err of Y Est	3.057414
R Squared	0.668664	R Squared	0.381739
X Coefficient(s)	0.011240	X Coefficient(s)	0.005623
Std Err of Coef.	0.000945	Std Err of Coef.	0.000855

Year	1985	Year	1989
Constant	6.335048	Constant	8.070842
Std Err of Y Est	3.151236	Std Err of Y Est	2.745377
R Squared	0.300524	R Squared	0.101690
X Coefficient(s)	0.004579	X Coefficient(s)	0.001646
Std Err of Coef.	0.000834	Std Err of Coef.	0.000584

Year	1990	Year	1991
Constant	9.07737	Constant	10.40827
Std Err of Y Est	2.44126	Std Err of Y Est	3.031080
R Squared	0.000229	R Squared	0.001997
X Coefficient(s)	0.000055	X Coefficient(s)	-0.00010
Std Err of Coef.	0.000437	Std Err of Coef.	0.000266

5. Consumption of Wine in Liters

Year	1970	Year	1980
Constant	4.749384	Constant	0.384717
Std Err of Y Est	3.068172	Std Err of Y Est	3.745941
R Squared	0.440520	R Squared	0.485440
X Coefficient(s)	0.008347	X Coefficient(s)	0.008516
Std Err of Coef.	0.001124	Std Err of Coef.	0.001048

Year	1985	Year	1989
Constant	7.835611	Constant	4.944623
Std Err of Y Est	3.829333	Std Err of Y Est	2.731316
R Squared	0.123742	R Squared	0.021141
X Coefficient(s)	0.003190	X Coefficient(s)	0.000715
Std Err of Coef.	0.001014	Std Err of Coef.	0.000581

Year	1990	Year	1991
Constant	2.602091	Constant	2.034966
Std Err of Y Est	2.265799	Std Err of Y Est	1.897859
R Squared	0.061658	R Squared	0.043465
X Coefficient(s)	0.000907	X Coefficient(s)	0.000312
Std Err of Coef.	0.000423	Std Err of Coef.	0.000175

6. Consumption of Beer in Liters

Year	1970	Year	1980
Constant	6.270226	Constant	13.32105
Std Err of Y Est	6.412804	Std Err of Y Est	8.169863
R Squared	0.250584	R Squared	0.079646
X Coefficient(s)	0.011370	X Coefficient(s)	0.005625
Std Err of Coef.	0.002350	Std Err of Coef.	0.002285

Year	1985	Year	1989
Constant	14.05737	Constant	14.53561
Std Err of Y Est	7.778117	Std Err of Y Est	9.760613
R Squared	0.077388	R Squared	0.015838
X Coefficient(s)	0.004994	X Coefficient(s)	0.002207
Std Err of Coef.	0.002060	Std Err of Coef.	0.002079

Year	1990	Year	1991
Constant	14.96008	Constant	16.36346
Std Err of Y Est	10.83614	Std Err of Y Est	10.01369
R Squared	0.020795	R Squared	0.001531
X Coefficient(s)	0.002467	X Coefficient(s)	0.000302
Std Err of Coef.	0.002024	Std Err of Coef.	0.000924

7. State Retail Trade in Rubles

Year	1965	Year	1970
Constant	112.2376	Constant	183.1528
Std Err of Y Est	34.67737	Std Err of Y Est	50.36631
R Squared	0.943028	R Squared	0.921156
X Coefficient(s)	0.575517	X Coefficient(s)	0.527872
Std Err of Coef.	0.016907	Std Err of Coef.	0.018458

Year	1980	Year	1985
Constant	325.8747	Constant	455.3181
Std Err of Y Est	78.24674	Std Err of Y Est	86.03390
R Squared	0.871995	R Squared	0.824496
X Coefficient(s)	0.478041	X Coefficient(s)	0.413397
Std Err of Coef.	0.021891	Std Err of Coef.	0.022796

Year	1989
Constant	530.9100
Std Err of Y Est	116.0396
R Squared	0.784536
X Coefficient(s)	0.394747
Std Err of Coef	0.024725

8. Sales of Food Products in State Retail Trade

Year	1965	Year	1970
Constant	63.05275	Constant	89.70682
Std Err of Y Est	40.15876	Std Err of Y Est	35.32104
R Squared	0.827578	R Squared	0.906344
X Coefficient(s)	0.358895	X Coefficient(s)	0.336913
Std Err of Coef.	0.019579	Std Err of Coef.	0.012944

Year	1980	Year	1985
Constant	162.0310	Constant	222.7428
Std Err of Y Est	54.63591	Std Err of Y Est	62.68846
R Squared	0.822921	R Squared	0.737385
X Coefficient(s)	0.275695	X Coefficient(s)	0.232874
Std Err of Coef.	0.015285	Std Err of Coef.	0.016610

Year	1989
Constant	302.8553
Std Err of Y Est	85.36741
R Squared	0.588104
X Coefficient(s)	0.181852
Std Err of Coef.	0.018190

9. Sales of NonFoods Products in State Retail Trade

Year	1965	Year	1970
Constant	49.18491	Constant	93.44604
Std Err of Y Est	27.75241	Std Err of Y Est	29.40142
R Squared	0.785470	R Squared	0.817743
X Coefficient(s)	0.216621	X Coefficient(s)	0.190959
Std Err of Coef.	0.013531	Std Err of Coef.	0.010775

Year	1980	Year	1985
Constant	163.8437	Constant	232.5753
Std Err of Y Est	43.24364	Std Err of Y Est	53.83872
R Squared	0.799842	R Squared	0.695828
X Coefficient(s)	0.202345	X Coefficient(s)	0.180523
Std Err of Coef.	0.012098	Std Err of Coef.	0.014265

Year	1989
Constant	228.0546
Std Err of Y Est	70.77910
R Squared	0.740034
X Coefficient(s)	0.212895
Std Err of Coef.	0.015081

10. State Public Dining

Year	1965	Year	1970
Constant	1.354491	Constant	7.586180
Std Err of Y Est	6.685011	Std Err of Y Est	9.293418
R Squared	0.866100	R Squared	0.827864
X Coefficient(s)	0.069354	X Coefficient(s)	0.062491
Std Err of Coef.	0.003259	Std Err of Coef.	0.003405

Year	1980	Year	1985
Constant	29.33344	Constant	38.35527
Std Err of Y Est	14.26384	Std Err of Y Est	14.50387
R Squared	0.623382	R Squared	0.558929
X Coefficient(s)	0.042955	X Coefficient(s)	0.036195
Std Err of Coef.	0.003990	Std Err of Coef.	0.003843

Year	1989
Constant	45.70781
Std Err of Y Est	15.53355
R Squared	0.555281
X Coefficient(s)	0.030944
Std Err of Coef.	0.003309

11. Consumer Services

Year	1965	Year	1970
Constant	1.166812	Constant	4.005914
Std Err of Y Est	1.961518	Std Err of Y Est	2.847906
R Squared	0.624524	R Squared	0.663876
X Coefficient(s)	0.010319	X Coefficient(s)	0.012272
Std Err of Coef.	0.000956	Std Err of Coef.	0.001043

Year	1980	Year	1985
Constant	10.99534	Constant	14.97932
Std Err of Y Est	4.619610	Std Err of Y Est	5.617743
R Squared	0.609194	R Squared	0.519700
X Coefficient(s)	0.013500	X Coefficient(s)	0.012954
Std Err of Coef.	0.001292	Std Err of Coef.	0.001488

Year	1989
Constant	26.44815
Std Err of Y Est	7.324297
R Squared	0.487236
X Coefficient(s)	0.012728
Std Err of Coef.	0.001560

12.Delivery of Bread to State Trade in Kg

Year	1965	Year	1970
Constant	189.2838	Constant	174.0151
Std Err of Y Est	19.07121	Std Err of Y Est	18.50344
R Squared	0.289031	R Squared	0.208191
X Coefficient(s)	-0.04960	X Coefficient(s)	-0.02909
Std Err of Coef.	0.009298	Std Err of Coef.	0.006781

Year	1980	Year	1985
Constant	153.1135	Constant	149.8061
Std Err of Y Est	12.44749	Std Err of Y Est	14.74241
R Squared	0.231537	R Squared	0.200539
X Coefficient(s)	-0.01599	X Coefficient(s)	-0.01636
Std Err of Coef.	0.003482	Std Err of Coef.	0.003906

Year	1989
Constant	133.9549
Std Err of Y Es	13.84351
R Squared	0.092209
X Coefficient(s)	-0.00786
Std Err of Coef.	0.002949

13. Delivery of Fish to State Trade in Kg

Year	1965	Year	1970
Constant	5.36217	Constant	10.04167
Std Err of Y Est	3.56330	Std Err of Y Est	4.376808
R Squared	0.31515	R Squared	0.113498
X Coefficient(s)	0.00986	X Coefficient(s)	0.004801
Std Err of Coef.	0.00173	Std Err of Coef	0.001604

Year	1980	Year	1985
Constant	4.963993	Constant	6.519227
Std Err of Y Est	5.872999	Std Err of Y Est	6.226552
R Squared	0.227923	R Squared	0.125283
X Coefficient(s)	0.007469	X Coefficient(s)	0.005224
Std Err of Coef.	0.001643	Std Err of Coef.	0.001649

Year	1989
Constant	0.510615
Std Err of Y Est	6.070575
R Squared	0.258160
X Coefficient(s)	0.006384
Std Err of Coef.	0.001293

14. Delivery of Eggs to State Trade in Units

Year	1965	Year	1970
Constant	-18.8985	Constant	-26.7530
Std Err of Y Est	20.51989	Std Err of Y Est	34.32370
R Squared	0.549688	R Squared	0.501538
X Coefficient(s)	0.092481	X Coefficient(s)	0.105568
Std Err of Coef.	0.010004	Std Err of Coef.	0.012579

Year	1980	Year	1985
Constant	40.30603	Constant	93.54873
Std Err of Y Est	37.62484	Std Err of Y Est	36.40726
R Squared	0.515401	R Squared	0.353144
X Coefficient(s)	0.090826	X Coefficient(s)	0.059635
Std Err of Coef.	0.010526	Std Err of Coef.	0.009646

Year	1989
Constant	109.7418
Std Err of Y Est	40.33761
R Squared	0.245571
X Coefficient(s)	0.041028
Std Err of Coef.	0.008595

15. Consumption of Sugar in Kg

Year	1965	Year	1970
Constant	29.66415	Constant	35.31030
Std Err of Y Est	4.155492	Std Err of Y Est	4.829502
R Squared	0.269062	R Squared	0.172883
X Coefficient(s)	0.010284	X Coefficient(s)	0.006770
Std Err of Coef.	0.002026	Std Err of Coef.	0.001769

Year	1980	Year	1985
Constant	44.50347	Constant	42.74898
Std Err of Y Est	5.401453	Std Err of Y Est	5.330118
R Squared	0.023512	R Squared	0.049134
X Coefficient(s)	0.001961	X Coefficient(s)	0.002686
Std Err of Coef.	0.001511	Std Err of Coef.	0.001412

Year	1989
Constant	43.93818
Std Err of Y Est	5.445002
R Squared	0.108632
X Coefficient(s)	0.003388
Std Err of Coef.	0.001160

16. Delivery of Meat to State Retail Trade in Kg

Year	1965	Year	1970
Constant	-12.0981	Constant	-11.4719
Std Err of Y Est	4.766079	Std Err of Y Est	6.470305
R Squared	0.875963	R Squared	0.812366
X Coefficient(s)	0.051666	X Coefficient(s)	0.041280
Std Err of Coef.	0.002323	Std Err of Coef.	0.002371

Year	1980	Year	1985
Constant	-15.8129	Constant	-11.8646
Std Err of Y Est	9.800082	Std Err of Y Est	10.91084
R Squared	0.657753	R Squared	0.575454
X Coefficient(s)	0.031801	X Coefficient(s)	0.028161
Std Err of Coef.	0.002741	Std Err of Coef.	0.002891

Year	1989
Constant	-1.95117
Std Err of Y Est	9.954767
R Squared	0.561448
X Coefficient(s)	0.020080
Std Err of Coef.	0.002121

17. Delivery of Milk to State Retail Trade in Kg

Year	1965	Year	1970
Constant	7.512406	Constant	35.23402
Std Err of Y Est	34.08345	Std Err of Y Est	36.38002
R Squared	0.714809	R Squared	0.726440
X Coefficient(s)	0.220115	X Coefficient(s)	0.181778
Std Err of Coef.	0.016617	Std Err of Coef.	0.013332

Year	1980	Year	1985
Constant	46.55644	Cons	84.85874
Std Err of Y Est	43.91782	Std Err	44.08413
R Squared	0.578605	R Squared	0.433961
X Coefficient(s)	0.120460	X Coefficient(s)	0.005571
Std Err of Coef.	0.012287	Std Err of Coef.	0.011680

Year	1989
Constant	137.0438
Std Err of Y Est	37.44193
R Squared	0.546508
X Coefficient(s)	0.073276
Std Err of Coef.	0.007978

Table B2. Ukraine (N=26)

1. Savings

Year	1989
Constant	616.9
Std Err of Y Est	191.3614
R Squared	0.197191
X Coefficient(s)	0.384795
Std Err of Coef.	0.158484

2. Alcoholic Beverages Sales in Rubles

Year	1970	Year	1989
Constant	-1.33544	Constant	5.144977
Std Err of Y Est	1.165738	Std Err of Y Est	33.36641
R Squared	0.782022	R Squared	0.175254
X Coefficient(s)	0.013737	X Coefficient(s)	0.062405
Std Err of Coef.	0.001480	Std Err of Coef.	0.027633

3. Consumption of 100% Alcohol in Liters

Year	1980	Year	1990
Constant	-0.62576	Constant	0.193276
Std Err of Y Est	1.306456	Std Err of Y Est	0.933187
R Squared	0.400105	R Squared	0.178415
X Coefficient(s)	0.005878	X Coefficient(s)	0.001764
Std Err of Coef.	0.001469	Std Err of Coef.	0.000773

Year	1985
Constant	0.936386
Std Err of Y Est	1.218166
R Squared	0.128193
X Coefficient(s)	0.003000
Std Err of Coef.	0.001597

4. State Retail Trade in Rubles

Year	1970	Year	1985
Constant	-3.13787	Constant	-280.220
Std Err of Y Est	38.45855	Std Err of Y Est	94.16524
R Squared	0.911568	R Squared	0.706963
X Coefficient(s)	0.768244	X Coefficient(s)	0.939508
Std Err of Coef.	0.048843	Std Err of Coef.	0.123468

Year	1975	Year	1990
Constant	-110.303	Constant	-72.5727
Std Err of Y Est	52.82015	Std Err of Y Est	137.3203
R Squared	0.903058	R Squared	0.639361
X Coefficient(s)	0.888501	X Coefficient(s)	0.741840
Std Err of Coef.	0.059422	Std Err of Coef.	0.113728

Year	1980
Constant	-222.397
Std Err of Y Est	72.45311
R Squared	0.852289
X Coefficient(s)	0.958951
Std Err of Coef.	0.081489

5. Sales of Food in State Trade in Rubles

Year	1970	Year	1989
Constant	-53.8928	Constant	-134.737
Std Err of Y Est	23.25609	Std Err of Y Est	67.85079
R Squared	0.917926	R Squared	0.592628
X Coefficient(s)	0.483899	X Coefficient(s)	0.332039
Std Err of Coef.	0.029535	Std Err of Coef.	0.056193

Year	1985
Constant	-226.994
Std Err of Y Est	58.41116
R Squared	0.642130
X Coefficient(s)	0.502594
Std Err of Coef.	0.076588

6. NonFood Sales in State Trade in Rubles.

Year	1970	Year	1989
Constant	27.36776	Constant	−279.399
Std Err of Y Est	22.08929	Std Err of Y Est	46.61667
R Squared	0.857948	R Squared	0.670228
X Coefficient(s)	0.337757	X Coefficient(s)	0.269640
Std Err of Coef.	0.028053	Std Err of Coef.	0.038607

Year	1985
Constant	−29.2505
Std Err of Y Est	65.17631
R Squared	0.611052
X Coefficient(s)	0.524754
Std Err of Coef.	0.085458

7. Public Dining in Rubles

Year	1970	Year	1985
Constant	12.87022	Constant	36.00731
Std Err of Y Est	8.866712	Std Err of Y Est	15.98096
R Squared	0.593170	R Squared	0.138994
X Coefficient(s)	0.066613	X Coefficient(s)	0.041244
Std Err of Coef.	0.011260	Std Err of Coef.	0.020954

Year	1975	Year	1989
Constant	16.79299	Constant	74.09232
Std Err of Y Est	11.53351	Std Err of Y Est	18.27668
R Squared	0.487821	R Squared	0.043934
X Coefficient(s)	0.062034	X Coefficient(s)	0.015896
Std Err of Coef.	0.012975	Std Err of Coef.	0.015136

8. Services in Rubles*

Year	1970	Year	1985
Constant	-1.79343	Constant	-0.75222
Std Err of Y Est	2.713023	Std Err of Y Est	4.737938
R Squared	0.695373	R Squared	0.453039
X Coefficient(s)	0.025503	X Coefficient(s)	0.027698
Std Err of Coef.	0.003445	Std Err of Coef.	0.006212

Year	1975	Year	1990
Constant	-1.11345	Constant	6.989577
Std Err of Y Est	3.454040	Std Err of Y Est	4.660790
R Squared	0.748683	R Squared	0.614993
X Coefficient(s)	0.032856	X Coefficient(s)	0.023900
Std Err of Coef.	0.003885	Std Err of Coef.	0.003860

Year	1980
Constant	-7.25177
Std Err of Y Est	3.754952
R Squared	0.702987
X Coefficient(s)	0.031830
Std Err of Coef.	0.004223

* Both 1970 and 1975 data are given in "comparable prices" of different base years

9. Sales of Meat in State Trade in Rubles

Year	1970	Year	1989
Constant	-0.02600	Constant	-81.4621
Std Err of Y Est	0.003156	Std Err of Y Est	8.221700
R Squared	0.919162	R Squared	0.768054
X Coefficient(s)	0.066214	X Coefficient(s)	60.25879
Std Err of Coef.	0.004008	Std Err of Coef.	.759450

10. Sales of Sausages in State Trade in Rubles

Year	1970	Year	1989
Constant	-0.02075	Constant	-72.9244
Std Err of Y Est	0.003947	Std Err of Y Est	8.495774
R Squared	0.833340	R Squared	0.733629
X Coefficient(s)	0.054919	X Coefficient(s)	56.78761
Std Err of Coef.	0.005013	Std Err of Coef.	0.984780

11. Sales of Milk in State Trade in Rubles

Year	1970	Year	1989
Constant	-0.01769	Constant	-29.6988
Std Err of Y Est	0.002761	Std Err of Y Est	3.759872
R Squared	0.892715	R Squared	0.769906
X Coefficient(s)	0.049566	X Coefficient(s)	27.70097
Std Err of Coef.	0.003507	Std Err of Coef.	0.091170

12. Butter Sales in State Trade in Rubles

Year	1970	Year	1989
Constant	-0.00567	Constant	-26.7416
Std Err of Y Est	0.001290	Std Err of Y Est	2.256513
R Squared	0.891190	R Squared	0.846394
X Coefficient(s)	0.022980	X Coefficient(s)	21.33415
Std Err of Coef.	0.001639	Std Err of Coef.	0.855186

13. Sugar Sales in State Trade in Rubles

Year	1970	Year	1989
Constant	14.93986	Constant	22.79481
Std Err of Y Est	2.987662	Std Err of Y Est	1.056616
R Squared	0.195617	R Squared	0.003718
X Coefficient(s)	9.166841	X Coefficient(s)	0.259995
Std Err of Coef.	3.794388	Std Err of Coef.	.868694

14. Fish Sales n State Trade in Rubles

Year	1970	Year	1989
Constant	-2.31816	Constant	-13.3622
Std Err of Y Est	1.515180	Std Err of Y Est	2.020875
R Squared	0.712320	R Squared	0.679919
X Coefficient(s)	0.014834	X Coefficient(s)	0.011950
Std Err of Coef.	0.00192	Std Err of Coef.	0.001673

15. Eggs Sales in State Trade in Rubles

Year	1970	Year	1989
Constant	-9.11334	Constant	-12.3043
Std Err of Y Est	1.209022	Std Err of Y Est	2.769308
R Squared	0.846578	R Squared	0.482322
X Coefficient(s)	0.017670	X Coefficient(s)	0.010845
Std Err of Coef	0.001535	Std Err of Coef	0.002293

APPENDIX C. EXTENDING OUR ANALYSIS TO AN EARLIER PERIOD

As was mentioned earlier the choice of the benchmark year in our study, i.e., 1965 for Russia and 1970 for Ukraine, was dictated by data availability but it would have been interesting to extend the study to an earlier year.

Regression analyses of Russia for 1965 and Ukraine for 1970 show a high degree of correlation between per capita money income of the population and per capita aggregate consumer retail trade sales. This suggests that trade data could be substituted for the income statistics for years for which the latter were not available.

We tested this observation by testing relationships between per capita retail sales as the independent variable and per capita sales of six food products in 85 oblast and key cities in Russia in 1957 (TsSU, SOVETSKAYA..., 1958, pp. 238-339), the earliest year for which detailed regional data are available. In the absence of regional population data for 1957 we used the 1959 population census statistics (TsSU, NASELENIYE..., 1975, pp. 14-35).

As can be seen from the summary below, the results of the test were both interesting and reasonable: we found a high degree of correspondence (R^2 between 0.8 and 0.9) for such basic product groups as meat, milk, sugar, and alcoholic beverages, a lower R^2 for low-income elasticity bread, and still lower R^2 for salt. The results are also close to what we found running regressions on these products over money income in Russia and Ukraine in 1965 and 1970.

There is, however, one important exception: sales of sugar regressed over trade in 1957 yields a high R^2 of 0.842 while sugar regressed over money income for Russia in 1965 shows a R^2 of 0.269 and for Ukraine in 1970 the R^2 is 0.200. But this exception should have been expected and, in an indirect way, validates our analysis and conclusions. Sugar, a relatively expensive commodity in the Soviet Union because of the high turnover tax, should under normal circumstances display a high degree of correspondence with income (or, its proxy, total trade sales) as indeed it did in our test in 1957. The establishment of close friendly relations with the socialist Cuba in the late 1950s led, among other things, to an expansion of imports of Cuban raw sugar and a rapid growth of its supply in the USSR. As supply grew the home distillers of "samogon" (moonshine) began switching from other inputs such as potatoes, flour, and grains to sugar -- it was estimated that in the 1970s and 1980s between 15 and 20 percent of sugar sold in retail trade in the USSR was diverted from direct human consumption into the illegal home production of alcohol. This development changed the parameters of demand for sugar in the USSR and probably explains the drop in the R^2 observed between 1957 and 1965.

We can conclude from this evidence that in all probability stable and predictable relations between money income of the population and consumption of different goods and services existed as far back as the late 1950s.

Table C1. REGRESSIONS OF PER CAPITA SALES OF VARIOUS FOOD PRODUCTS OVER TOTAL RETAIL SALES USED AS A PROXY FOR INCOME, 1957, RUSSIA (N=85)[34]

Meat		Alcohol	
Constant	-143.019	Constant	83.77911
Std Err of Y Est	47.8161	Std Err of Y Est	115.4318
R Squared	0.893881	R Squared	0.785369
X Coefficient(s)	0.09396	X Coefficient(s)	0.149500
Std Err of Coef.	0.003553	Std Err of Coef.	0.008578
Milk		**Sugar**	
Constant	-66.8968	Constant	-8.61848
Std Err of Y Est	32.34133	Std Err of Y Est	30.32624
R Squared	0.789588	R Squared	0.841486
X Coefficient(s)	0.042417	X Coefficient(s)	0.047308
Std Err of Coef.	0.002403	Std Err of Coef.	0.002253
Bread		**Salt**	
Constant	93.77747	Constant	5.113032
Std Err of Y Est	59.06044	Std Err of Y Est	1.122741
R Squared	0.512817	R Squared	0.045767
X Coefficient(s)	0.041025	X Coefficient(s)	-0.000160
Std Err of Coef.	0.004389	Std Err of Coef.	0.000083

[34] Another confirmation of the useability of the trade data for income is seen in the following test. We repeated regressions on 1965 per capita sales of three food products in Russia with total retail trade substituted for income. The R^2's so calculated were: alcohol in rubles - 0.791, meat - 0.943, milk - 0.806, and bread - 0.255, that is corresponding closely to R^2's obtained with food over income regressions (Table 1).

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