

ALCOHOL IN THE SOVIET UNDERGROUND
ECONOMY

by

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FOREWORD

The research for this study was completed in early 1982 but the paper itself remained somewhat unfinished waiting for completion of the Berkeley-Duke emigre survey which provided the author with estimates of such phenomena as the theft of technical alcohol from places of employment, the use of different inputs in illegal home distillation of alcohol, purchases and prices of samogon, and the like. Computerization of the emigre questionnaire was completed by mid-1985, and so was the paper.

Thus the study discusses and analyzes the alcohol underground through early 1982 but is being offered to the reader only now.

Continuing to read Soviet monographs and periodicals the author collected a large body of additional evidence which, however, does not add anything new to the main themes of the study. Some new data provided important supporting evidence for estimates made earlier. For example, a recent Soviet article reported that "illegal home distillation of alcohol uses up more than one million tons of sugar annually" (G. Bazhenov, Literaturnaja gazeta, May 29, 1985, p. 11), which is consistent with the author's estimate.¹

Otherwise the new material supports the conclusions reached in the study without additional quantitative evidence.

¹The author estimated the output of 40 percent samogon at about 1.6 billion liters in the late 1970s and speculated that up to 75 percent of samogon was made out of sugar (p. 4 and p. 11). We do not know exactly what "more than one million tons of sugar" is, but, for example, 1.2 million tons would yield between 1.1 and 1.2 billion liters of samogon. Using the 75 percent share would result in an estimate of 1.5-1.6 billion liters, which is very close to the author's figure.

Accordingly, the study and its conclusions can be viewed as current despite the cutoff of Soviet sources in early 1982.

In May of 1985 Soviet authorities launched a new and far-reaching anti-drinking campaign marked by higher penalties for drunkenness, increased restrictions on the sale of alcoholic beverages, and a projected reduction in the output of vodka and fruit wine. Penalties for making, selling and buying samogon were increased, and so were penalties for speculation in state produced alcoholic beverages. In August, prices on all alcoholic beverages were raised by a hefty 25-35 percent.

Gorbachev's anti-drinking campaign possibly opened a new chapter in the Soviet struggle against alcohol abuse, but we would have to wait for a couple of years to assess the results of the campaign on drinking generally and on the vast alcohol underground economy. Accordingly, the campaign is not discussed in this study.

1. INTRODUCTION¹

The purpose of this paper is to analyze and, whenever possible, to quantify illegal private activities and transactions associated with alcohol and drinking in the USSR. Specifically, the following topics will be explored: illegal home distillation of samogon; theft of alcohol from industry and distributors; and various abuses in the trade of alcoholic beverages.

The reader who is familiar with Professor Grossman's work on the second economy will find that the various aspects of alcohol "on the left" have the same origins and explanations as other illegal markets and private transactions in the USSR [1977 and 1979].

There are, however, some factors which make the alcohol phenomenon unique. The first is the very magnitude of transactions and activities involving alcohol "on the left" which can be conservatively placed at 16-18 billion rubles (gross) in 1979 (see Appendix). This means that between one-fifth and one-fourth of all alcohol transactions are illegal, thus dwarfing by comparison other mixed (i.e., legal-illegal) markets. Illegally procured alcohol, i.e. home-distilled and stolen, boosts the per capita consumption by at least one-third and of strong liquor by over one-half.

Another interesting issue is the unique role played by alcohol, both legal and illegal, in the second economy, where it is an instrument of establishing trust between different parties, is used as an almost mandatory element in bribes, and, in fact, services as a "second currency" or a "commodity money" supplementing or replacing the ruble.

* * *

Soviet official sources publish very little on production, sales, prices, and consumption of alcoholic beverages, and it is not, therefore, surprising that virtually no statistics on the alcohol "on the left" are available and thus had to be estimated. A summary of published data and the estimation, verification, and full documentation of various issues and developments relevant for this study such as expenditures on state produced alcoholic beverages, prices and taxes, output of synthetic ethanol, and home distillation of samogon are available in a separate statistical study by the author [Trembl 1982].

* * *

2. SAMOGON

The private distillation of samogon² has always been, and still probably is, the single most important illegal economic activity in the USSR. Its significance lies not only in the billions of rubles of "left" revenues it generates and the thousands of tons of agricultural produce wasted in its production, but also in the fact that the existence of the samogon market has consistently frustrated and handicapped the Soviet government's struggle against alcoholism and heavy drinking in the country. Any radical policy proposal, such as increasing prices or decreasing the output of alcoholic beverages, was always countered by the argument that such policy would simply result in a higher output of samogon and hence would be ineffective.

As early as 1927, Stalin, hardly a man to yield to the peasants, justified the resumption of the large-scale marketing of vodka³ in the USSR by stressing the fiscal needs of the new state and by noting that halting

the production of vodka would only lead to home distillation by peasants [Stalin, 1949, 232].

Soviet authorities clearly recognize the existence of a serious alcohol problem in the country, and both the technical literature and the periodic press frequently discuss various aspects of alcohol abuse. However, no summary statistics on the production or consumption of alcoholic beverages, or data on alcoholism, are published. Samogon is treated in a similar manner -- the literature offers anecdotal evidence on samogon making, discusses the waste of foodstuffs, and explains the health hazards of drinking samogon, but virtually no information on the extent of illegal distillation is available. In fact, the last summary statistics on samogon were published in the late 1920s.

It must be pointed out that the very nature of illegal home distillation in the USSR is such that accurate accounting is all but impossible, and authorities themselves probably do not have exact year-by-year, region-by-region statistics on the output of samogon.⁴

In the absence of published Soviet statistics on the level of samogon production, the figures below were estimated by the author on the basis of a variety of secondary sources and indirect evidence and must be considered as first approximations [Trem1, 1982, 55].

Average Annual Output of Samogon
(Millions of liters, 40% alcohol content)

	<u>Rural</u>	<u>Urban</u>	<u>Total</u>	<u>Samogon as percent of total consumption of strong alcoholic beverages</u>
1955-1959	947	88	1,035	44.2%
1960-1964	994	167	1,161	42.0%
1965-1969	1,160	251	1,411	40.7%
1970-1974	998	342	1,340	36.1%
1975-1979	1,037	596	1,633	35.0%

Thus, while the relative importance of samogon in the total quantity of strong alcoholic beverages is declining, its absolute output is increasing and is exceptionally high for a country at the level of economic development of the USSR.

In the 1975-79 period, consumption of samogon averaged about 3.4 liters of absolute alcohol per person 15 years and older. Adding this figure to consumption of state produced alcoholic beverages of about 11.6 liters gives us a total consumption of about 15 liters of absolute alcohol per person [Trem1, 1982, 68]. Even without stolen alcohol and home-made wine and beer, this average consumption figure is one of the highest in the world, exceeded only by Portugal, France, and Italy. A more meaningful statistic reflecting on health impact and effects on behavior of drinkers is consumption of strong beverages (40 percent alcohol and more). The average consumption is about 9.4 liters of absolute alcohol (6 liters of state produced beverages and 3.4 liters of samogon) per person 15 years and older and is the highest in the world [Hyman et al., 1980, 11].

To fully appreciate the magnitude of samogon consumption, we can note that during Prohibition consumption of illegal domestically produced

spirits in the United States was estimated at about 4.5 liters of absolute alcohol per person 15 years old and older [Warburton, 1932, 66], that is, at just about the level of consumption of samogon and stolon alcohol in the USSR in the 1970s.

It must be also stressed that production of samogon is highly differentiated by regions in the USSR. While accurate calculation is all but impossible, rough estimates indicate that anywhere from 90 to 95 percent of all samogon is produced in the three major Slavic republics, the RSFSR, the Ukraine and Belorussia. Production of home-made wine, beer and malt-type "braga" (which is legal for consumption within the household) is prevalent in the Baltic republics, and wine-growing Moldavia, Georgia, and Armenia.

There are several interrelated reasons for the unfaltering operation of this huge samogon market.

Alcoholic beverages are very expensive relative to income in the USSR.⁵ International comparisons of the purchasing power of wages are fraught with conceptual and statistical problems, and Soviet-Western comparisons are even more difficult because of differences in distribution of public services. Nevertheless, we can get a rough idea of the cost of alcohol relative to earnings from the following tabulation, based on an analysis by Bush [1977, 137 and 140]. The figures show the cost of one liter of spirits (vodka or gin) in the mid-1970s expressed in average industrial worker's time in minutes.

Munich	89
Washington, DC	96
Paris	212
London	294
Moscow	837

An average industrial worker's family in the mid-1970s spent about 410 rubles per year, or some 11-12 percent of the total family budget, on state-produced alcoholic beverages, which was about one-third of the family food bill.⁶ The pattern was approximately the same in a kolkhoz family. These country-wide averages do not tell the whole story. Because of a number of factors, such as higher consumption of alcohol in Slavic areas and patterns of income distribution, we can assume that a significant share (possibly as high as 25-30 percent) of urban families in Slavic republics of the USSR may spend as much as a third of the family income or more on alcoholic beverages.

It is not surprising that, with high and continuously rising per capita consumption of alcohol, Soviet drinkers sought to relieve the burden on the family budget by seeking cheaper substitutes for state-produced beverages.

Equally strong economic factors operate on the supply side of the samogon market. Samogon distillation is a relatively simple process requiring little skill and fairly primitive equipment easily available. Thus, according to one knowledgeable émigré source [GIG 10-80 AB],⁷ the drum of a popular Soviet washing machine is widely used as the main tank for distillation. For those without mechanical skills the necessary equipment can be always purchased on the black market. In the mid-1970s, for instance, a variety of distillation apparatuses were almost openly offered at the flea market dealing mainly with automobile spare parts at the Dmitrievskoe highway at the outskirts of Moscow [TJT 11-81 MM].

Samogon can be made from a variety of agricultural products such as grain, potatoes and sugar. Depending on the input prices, the average cost of the materials used ranges between 0.7 and 1.3 rubles per liter of

samogon of 40 percent alcohol content. A home distiller can produce about 20-25 liters of samogon per day; if we were to value his labor at the average wage in the 1970s, the cost of the labor input would add another 0.35-.4 rubles per liter for a total cost of between 1 and 1.7 rubles.

Samogon prices vary with respect to the alcohol content, agricultural products used in distillation, and area. In the mid and late 1970s, average samogon prices fluctuated between 4.5 and 5.0 rubles per liter, with urban prices closer to the upper limit of the range.

Thus, samogon distillation is highly profitable -- even allowing for some "protection" payoffs and other marketing costs, the difference between the sales price and the cost of materials amounts to between 3 and 4 rubles per liter. A full-time samogon maker, producing for the market, could thus earn anywhere between 18,000 and 24,000 rubles per year -- a rather comfortable income compared with the average annual wage of state workers and employees in 1975 of about 1,800 rubles. The samogon market thus constitutes a medium-sized industry in the USSR, with a labor force of some 230-260,000 workers (man-year equivalents) earning billions of rubles.

The estimation of the total value of the output of samogon depends on the evaluation of the labor inputs and on the assumption concerning the shares of output produced for drinking within the household of the maker and for outside marketing. Here are alternative estimates for some selected years:

	<u>1955</u>	<u>1965</u>	<u>1975</u>	<u>1979</u>
	(millions of rubles)			
a. Total output valued at market prices	2,290	3,940	6,260	7,250
b. Valuing one-half of the output at cost of materials and labor at the average state wage, and one-half of the output at market prices	1,570	2,610	4,100	4,760
c. Same as b but assuming that 2/3 of output is produced for home use and 1/3 for outside sales	1,320	2,150	3,370	3,900

There are some other important factors affecting both the supply and demand sides of the samogon market which should be considered.

Samogon is not a perfect substitute for vodka, because no matter how skilled the home distillers are, their product will always contain malodorous impurities such as fusel oils. Industrial distillation and filtering are more effective, and the industrially produced ethanol used for making vodka should be purer. However, the quality of both samogon and vodka can vary depending on a number of factors, and, accordingly, the demand for samogon is determined, among other things, by its quality and the quality of state-produced vodka.

A major factor which has sustained (and in fact led to an increase in) the demand for samogon in the USSR has been the marked deterioration of the quality of state-produced vodka and other alcoholic beverages.

The best vodka has always been produced from ethanol distilled from grains or from potatoes.⁸ Facing shortages of main agricultural crops, the Soviet government increased the production of ethanol from molasses and later from sugar beets. Until the mid-1950s, the inferior ethanol produced from these inputs was primarily used for industrial purposes.

However, as the demand for alcohol grew and the performance of agriculture did not improve, the allocations of grains and potatoes to the alcohol industry were gradually cut, and molasses, sugar beets, and raw sugar were used instead. By the early 1960s, probably as much as 40 percent of vodka was made from ethanol distilled from molasses, sugar beets, or sugar. Inferior ethanol was also used in the production of fortified wines, which the Soviet population was drinking in ever-increasing quantities. There is strong evidence that some time in the late 1950s the Soviet government approved the use of wood-hydrolytic ethanol for human consumption.⁹ One can speculate that the vodka made from this ethanol, termed "suchek" by drinkers, proved too hazardous to the drinkers' health, and the use of this synthetic ethanol in the vodka and wine industries was curtailed after 1963. However, it appears that small quantities of wood-hydrolytic ethanol are still being added to the food-distilled ethanol for marketing.

The marketing of vodka made from molasses and sugar-beet ethanol, the inferior quality of fortified wines, and the real or imagined health dangers of wood-hydrolytic ethanol -- often confused by the public with the lethal distillate, methanol -- all gradually led to distrust of state-produced alcoholic beverages, forcing a certain segment of the drinkers to switch to samogon. In fact, some émigrés interviewed for this study claimed that the home-distilled spirits are better than the state produced vodka [C1G 10-80 AB; T2A 2-81 AC; T3T 2-81 MM].

Ironically, almost the same economic factors which forced the government to adulterate the ingredients of vodka and to perform the dangerous experiments with synthetic ethanol resulted in a gradual improvement of the quality of samogon in the country.

Because of the primitive equipment and technology used in home distillation, the quality ordering of samogon with respect to inputs is different. The best, i.e., purest and least malodorous, samogon is produced from sugar, followed by grain (or flour), sugar beets, and potatoes [Krokodil, #8, 1964, 8]. Sugar is preferable, not only because of the higher quality, but because it is the least bulky of the inputs -- it takes about 1 kg of sugar to produce 1 liter of samogon of 40 percent alcohol content, compared with 3 kg of grain, 5 kg of potatoes, or 9 kg of sugar beets.¹⁰ Considerations of space and the need to escape police detection make sugar very attractive. The selection of the actual commodity to be used depends, of course, on local conditions, particularly prices and availability.

A rather important, possibly key, role in the spread of samogon making in the last 20 years was played by Cuban sugar. In the mid-1950s the Khrushchev government made a serious effort to expand the production of sugar by transferring some land to sugar-beet growing and by building new sugar refining capacities. Just as this program began to bear fruit the special relations with Cuba added massive imports of raw cane sugar to the already rising domestic output, resulting in a sugar glut which continued well into the late 1970s. The government was in a quandary: since sugar is moderately price-elastic, the sales to the population could be increased by price cutting, but this would only make samogon distillation from sugar still more profitable. Under the circumstances it was decided to channel part of the growing stocks of sugar into the state production of alcohol, uneconomical as it was. Thus, between 1962 and 1975 (the last year for which statistics are available) on the average some 400,000 tons of raw sugar was used annually for alcohol production.

The consumption of sugar was growing, but the stocks of stored sugar in industry and trade organizations were growing even faster, creating storage problems. This abundance of sugar was soon felt throughout the system -- sugar was becoming more readily available, so the formal or informal rationing of so many kilograms per person, often used in Soviet retail trade when facing shortages, was abandoned. The sugar glut also resulted in relaxed security in warehouses and on railroads which, in turn, led to large-scale theft of sugar for samogon making; truck drivers and loading dock workers stole sugar and sold it at prices lower than state retail prices.¹¹

The greater availability of sugar throughout the country, combined with the general preference of samogon makers for sugar, resulted in a gradual shift from other commodities to sugar.¹² In the late 1960s and early 1970s probably as much as 75 percent of all samogon was made out of sugar.

The availability of sugar for samogon making had yet another impact. Traditionally, home distillation of samogon has been a rural phenomenon in Russia. While certain quantities of samogon did find their way into city black markets, in all probability very little if any samogon was actually made in cities until the mid or late 1950s.

The general availability of sugar was probably one of the main reasons for the rapid spread of samogon making to cities shown in the statistics above. The large-scale rural-urban migration brought to cities millions of former peasants who were turning to the familiar trade of samogon making to satisfy their own need for alcohol¹³ and to supplement their low incomes. The traditional agricultural inputs into home distillation these peasants used in rural areas, such as grains, sugar beets, potatoes, and fruits were

either more difficult to obtain or more expensive in cities, but sugar was available and samogon making flourished. The fact that sugar-based distillation was easier to conceal and produced better tasting samogon only reinforced the trend. It can be therefore argued that, without the general availability of relatively inexpensive sugar, the spread of samogon to cities would not have taken place or would have been slower.¹⁴

Cuban sugar thus played a singularly important role in several facets of the development of alcoholism in the USSR in the last 20 years. It is, of course, a coincidence, but it is nevertheless interesting to note, that total imports of Cuban raw sugar in the 1955-1979 period amounted to some 47 million tons, or just about equal to the use of 4-6 million tons of raw sugar in the state of alcohol industry, and 38-42 million tons of sugar which would have been required had all of the samogon been produced from sugar in the same period.

Soviet samogon makers and samogon drinkers fully appreciate this as reflected in a popular ditty which appeared in the early 1970s:¹⁵

O thank you, thank you, Cuba
Every Russian does proclaim.
A pint from every pound of sugar
And it burns with bright blue flame . . .

The Soviet government was trying to eradicate illegal home distillation from the very first day of its existence. The main reason for holding samogon making against the law -- the reason shared with all other states and governments -- is fiscal. Tax on alcoholic beverages is a singularly important source of revenue to the Soviet state: in the 1970s, turnover taxes collected on sales of alcoholic beverages generated about 10 percent of the total state budget and comprised about one-third of all taxes (income and sales) paid by the population. In the late 1970s, the

price of 1 liter of vodka Extra was 8.00 rubles, out of which about 7 rubles was the tax. The illegal production of some 1.6 billion liters of samogon in the late 1970s has deprived the state of billions of rubles of revenues.

The second and equally compelling reason is the large quantity of food-stuffs used up in the production of samogon. Small-scale home production of samogon uses on the average between 2 and 2.5 times the quantity of agricultural inputs used in industry per equal quantity of alcohol produced. With the perennial shortages of agricultural products, the wasteful use of millions of tons of sugar, grains, potatoes, and sugar beets in home distillation is a cause for grave concern to the government.

Control of samogon through law enforcement has apparently never been particularly successful in the USSR. The laws and regulations have changed from time to time, the penalties have been increased or relaxed, but market forces proved to be stronger and home distillation continued virtually unchecked [Powell 1978, 140-142 and 308-309].

The 1948 Criminal Code of the RSFSR fixed the penalty for the production of samogon for personal use at a prison term of 1 to 2 years duration, and the penalty for production for commercial purposes was set at 6-7 year imprisonment with confiscation of all or a part of personal property.¹⁶

The revised 1960 Criminal Code reduced the penalty for commercial production of samogon to 1 to 3 year prison terms, and to not more than a 1-year term and a fine of 30 rubles for the production of samogon for personal use [Berman 1966, 207].

For the first time in Soviet law a fine was set for purchasing samogon [Gertsenzon 1970, 3].

However, all the legislation, instructions to the police and appeals for public support produced no appreciable results, and home distillation continued. It seems that a large share of samogon makers are never detected, and those who are apprehended as a rule pay fines or are placed on probation. According to a Soviet legal specialist, Ostroumov, in some periods "the samogon makers account for one-third of all convicted in rural areas "[1976, 296]. However, of those convicted of illegal home distillation only some 5-6 percent were sentenced to jail terms.

There are several reasons for the continuous failure of the authorities to arrest or eradicate samogon making through law enforcement.

It must be remembered that, unlike the American moonshiners, samogon makers in the USSR have always been small-scale operators.¹⁷ Most samogon is produced within the household in small batches of 10 to 50 liters, using primitive equipment which is sometimes indistinguishable from kitchen utensils.¹⁸ Thus, the difficulty of detection of these small operations is significant. The small scale of family distillation also means that detection at the point of sales of inputs (sugar, potatoes) is practically impossible.

A successful defense strategem in wide use in samogon making households is to have an elderly, retired, or invalid relative accept the responsibility for the illegal still once it has been discovered by the police. As a rule, these "Sitz-babushkas"¹⁹ can expect the leniency of the courts [Boldyrev et al., 1966, 25]. The Supreme Court of the RSFSR brought this practice to the attention of the police and the courts [Tkachevskii 1974, 128], and later the Supreme Court of the USSR issued a special set of instructions designed to increase the effectiveness of anti-drinking

measures, again stressing the importance of apprehending the real culprits [Sbornik . . . 1978, 31] but apparently without much success.

The difficulty of controlling the samogon markets are obviously also compounded by graft and protection involving local militia, particularly in rural areas. The evidence is indirect, as the Soviet media would seldom if ever report corruption or bribe taking by militia. It is interesting to note that Krokodil over the years carried a number of stories and cartoons depicting civil local authorities who are blind to open samogon making.²⁰ Since local civil authorities do not have the responsibility of investigating or apprehending samogon makers, one must interpret the stories as disguised references to local militia.

It is very unlikely, given the past record, that Soviet authorities will succeed in eradicating or even in drastically reducing the home distillation of samogon in the foreseeable future. It would take a radical economic reform to realign the prices of a number of consumer goods and incomes, and to change the quality of state-produced alcoholic beverages to reduce the economic incentives for the production and drinking of samogon [Trem 1975, 161-177]. The educational campaign and legal and police measures alone would not suffice.

The picture of the samogon market presented here would not be complete without mentioning of other homemade alcoholic beverages such as grape, fruit, and berry wines, beer and braga, which are produced in large quantities, particularly in rural areas. Production of these beverages is legal as long as they are consumed within the household [Matyshevskii, ed. 1980, 82]. The alcohol content of these beverages is relatively low, ranging from 4-6 percent for beer to 11-12 percent for wine, but there is some evidence that some of the braga varieties get to be quite potent

[Krokodil No. 15, 1959, 12, and No. 35, 1966, 15; Vneocherednoi... 1959, 240-241]. Not surprisingly, some of these beverages find their way into the markets. [Sovetskaia Moldavia, June 22, 1972, 4].

No statistics on the output of these beverages are available. In the late 1970s the annual output of homemade grape wine was roughly estimated at some 600 million liters, and of fruit and berry wines in the range between 500 and 1,500 million liters. Including the homemade beer and bragas, the production of which cannot be estimated with any degree of accuracy, the value of these beverages could be placed at between one and two billion rubles [Trem 1982, 62-66].

3. THEFT OF ALCOHOL

The traditionally strong demand for alcohol combined with the high prices of alcoholic beverages relative to the income of the average Soviet citizen inadvertently led to extra-market procurement of alcohol. Thus a plethora of illegal transactions, such as theft, swindling, corruption, graft and black-market activities have always permeated the sphere of production and distribution of ethanol and of alcoholic beverages in the USSR.

Soviet sociologists and legal specialists, citing impressive statistics, are ready to reduce almost all criminal and illegal activity in the country to alcohol-related or alcohol-caused [Gertsenzon 1966, 6-10; E. Boldyrev et al., 1966, 4-15; Connor 1972, 46-47; Powell 1978, 212-217]. The high correlation between crime and drinking does not, by itself, establish the causality, particularly in a country with historically high and ubiquitous consumption of alcohol. But it does appear that a large share of criminal and illegal activities are directly or indirectly related

to alcohol. According to one authoritative author, an analysis of thefts committed in one region of the USSR in 1972 showed that in 62 percent of the cases either alcohol or alcoholic beverages were the object of theft, or the perpetrators were engaged in theft in order to obtain funds to buy alcohol [Tkachevskii 1974, 133]. The same author cited another source, unfortunately unavailable to this author, according to which about one-half of all theft of state property is related to drinking.

The alcohol, vodka and wine producing industries have always been an attractive target for theft. In 1949, perhaps as a symbolic prelude to the rapid post-World War II growth of the second economy in the USSR, a scandal broke in the Ministry of Food. We do not know all the details, but shortages of alcohol in vodka factories were apparently serious enough for removal of V.P. Zotov, the Minister of Food since 1939. Apparently, A. Mikoyan, who tried to intercede on his behalf, was also accused by Stalin of lax controls. The new minister, D.V. Pavlov (from whose memoirs we learned about the story [1979, 216-218]) did indeed uncover theft and the frequent drinking of alcohol by administrators on premises.

In the Soviet Union as in other industrial nations, alcohol is used not only for making beverages but also as an input into the production of various chemicals and drugs, in food processing, in medicine and as solvents, thinners and cleaning fluids. Thus, large quantities of alcohol are stored in various enterprises and transported great distances, making theft relatively easy. The theft takes many forms, from periodic drinking on premises and smuggling out by workers and employees to large-scale theft from enterprises, construction sites, and while in transit.

The small quantities smuggled by workers from their places of employment are consumed within their households or used in barter or

bribes. Alcohol stolen in large quantities and, as a rule, by outsiders, is used to make alcoholic beverages for resale.

However, "no effective methods of policing the theft of alcohol used for technical and medicinal purposes have been devised," according to two prominent Soviet specialists, Strumilin and Sonin [1974, 36].

An accurate estimation of the quantities stolen is all but impossible, but some indication of the order of magnitude can be deduced from several sources. The Soviet press has continuously reported the theft of alcohol. A survey of Krokodil for the 1960-1980 period yielded 22 stories or cartoons dealing with alcohol theft, with more than half of the references appearing since the mid-1970s.

The extent of drinking stolen alcohol or stolen alcoholic beverages on premises is illustrated by rather telling stories published in the press. A test conducted by a newspaper in Moscow stores showed that more than fifty percent of the sales personnel were in different states of inebriation [iG, July 27, 1977, 12]. This astonishingly high percentage is supported by other evidence. Soviet medical specialists, for instance, report a high correlation between alcoholism among employees and access to alcohol in their places of employment. Several studies, for instance, show a significantly higher percentage of alcoholics among women employed in retail trade and in restaurants than in other professions [Fedotov, ed. 1968, 15-16; Timofeeva et al. 1973, 57]. It is reasonable to suggest that these employees were drinking not at their own expense.

Another report described how 40 construction workers stole and consumed, during working hours, 1,000 liters of industrial alcohol in the span of six months [Pravda, July 13, 1980, 6]. This amounts to the equivalent of about one liter of vodka drunk per day per worker. This

amazing story goes a long way in explaining the quality of construction work in the USSR.

The management is either unable to police technical uses of alcohol or views drinking on premises or smuggling out of alcohol by workers as a necessary inducement to the labor force, since many enterprises and organizations knowingly overstate the technical needs in alcohol. Thus, one survey indicated that one-third of Leningrad region enterprises licensed to receive alcohol for technical purposes have been inflating their orders [Babushkin 1974, 25; see also Besriadin and Rosenfel'd, 1974, 22].

The émigré survey yielded evidence of surprisingly frequent theft of alcohol from places of employment, with 14 percent of families interviewed reporting having regularly carried out on the average 2.1 liters of alcohol per month. Employment of those taking alcohol shows a mixed pattern: industries in which theft was reported most frequently were machine-building, construction, metal and woodworking, and repair; engineering and medical professions being the most frequently listed occupations of perpetrators.

Normalizing the survey-based data on the basis of total 1979 non-agricultural employment gives us an annual estimate of about 160 million liters of alcohol taken out from places of employment.^{20a} Adding to this figures alcohol stolen and drunk while at work would in all probability push this estimate close to 190-200 million liters.

Theft of alcohol and other illegal transactions involving alcohol are widely spread among the Soviet military. It is not surprising that the enlisted men earning between 3 and 5 rubles per month are engaged in theft of alcoholic beverages, purchases of samogon, theft of military property

for the purpose of exchanging it for alcohol, and in theft of industrial alcohol and alcohol based liquids such as brake fluid, antifreeze, and de-icing fluids [Krasnaia zvezda, January 25, 1970, 4; Gabriel 1980, 152-159; Aspin 1982]. Estimates are all but impossible, but the amounts of alcohol and alcohol surrogates procured annually by 2.5-3 million enlisted ranks must be staggering.

The theft of alcohol of this magnitude raises an interesting and an alarming question. In the late 1970s, Soviet industry was producing about 3,200 million liters of ethanol, out of which about 1,800 million liters were made from raw foodstuffs (grains, potatoes, etc.), and about 1,400 million liters were synthetic ethanol produced from ethylene (by-product of oil refining), sulfites, and wood. According to the officially stated government position, synthetic ethanol is harmful when consumed internally. Thus, only food-based ethanol can be used for human consumption: of the total of 1,800 million liters of food-based ethanol produced, between 1,550 and 1,650 million liters are used for alcoholic beverages and between 150 and 250 million liters are earmarked for food processing, drugs and medicine [Tremi 1982, 41-44]. No matter what the margin of error in our estimate of stolen alcohol, the quantities stolen (plus the alcohol consumed on premises) are simply too large to be met out of the relatively small amount of food-based ethanol distributed outside of the alcoholic beverage industry. The only conclusion that can be drawn from this is that a large share of illegally procured ethanol is of the synthetic type, and hence its consumption constitutes a serious health hazard for the Soviet population.

Theft of alcohol or beverages in large quantities is also frequent, and the culprits are either workers and employees (usually of alcohol,

vodka and wine plants) or outsiders [Simis 1982, 253-257]. Security is especially lax on railroads, as the large-scale theft of alcohol while in transit is reported particularly often in the Soviet press.²¹

The quantities involved are rather high: one source reports the loss of 6,700,000 liters of alcohol in rail transit in the RSFSR in one year [Babushkin 1974, 27].

Not surprisingly, theft of alcohol is widely practiced in medical services. Theft of alcohol by doctors, pharmacists, and laboratory personnel has been periodically reported in literature.²²

The alcohol and vodka and wine producing industries are also an attractive target for grand theft. Thus, we read of such cases as the theft of alcoholic beverages worth 754,000 rubles in Pavlodarsk [Kudriavtsev, ed., 1971, 248], of 199,000 rubles worth of cognac in Moldavia [Trud, June 9, 1979, 2].

Marketing stolen alcohol and wine products presents no problem for what appears to be a large underground industry. Studies of the "second economy" and émigré interviews indicate that it is relatively easy for private, illegally operating producers to sell their goods through regular state retail outlets [Katsenelinboigen 1978, 194-196; Grossman 1979, 836-838], and the same is true of alcohol. The stolen alcohol and wine products are made into bogus vodka and wines, which are then bottled in standard glassware, affixed with faked labels, and channelled into regular liquor stores and restaurants to the financial benefit of all parties.

We can get some idea of the quantities involved from a sample of Soviet newspaper articles, such as reports of 51,000 liters of inferior wine confiscated from one operator in Moldavia [S1, December 27, 1977, 4], bogus vodka valued at 154,000 rubles in Azerbaïdzhân [S1, December 13,

1975, 4], theft of cognac worth about 1,180,000 rubles in Odessa [Trud, October 6, 1979, 2], sales of 3,700 bottles of bogus vodka in L'vov [S1, January 5, 1980, 3], 54,000 bottles of Extra vodka made from stolen inferior alcohol in Batumi [Babushkin 1974, 26], confiscation of 1,000 bottles of bogus cognac, 400 bottles of bogus vodka, two large barrels of alcohol, as well as labels, glassware, and dyes in Abkhazïia. The output of this home operation was found in local liquor stores [Tkachevskii 1974, 130].

Profits derived from stolen alcohol are impossible to estimate. The state retail price of food-based ethanol (95 percent) is 16.6 rubles per liter [Nikitin and Sorokin 1974, 80]. It would appear that the black-market price would be in the range between 10 and 12 rubles per liter [T3T 6-80 MM], or less if the stolen ethanol was clearly denatured or otherwise inferior. As was explained above, alcohol stolen in small quantities from places of employment can be estimated on the basis of the émigré survey at some 200 million liters, but this estimate appears to be rather high. Alcohol stolen in larger quantities from the alcohol and beverage factories, railroads, and other industries cannot be estimated at all, but a guess of 20 to 30 million liters seems to be reasonable. In all probability the overall quantity stolen would be in a wide range between 200 and 250 million liters, or between 2.0 and 3.0 billion rubles at black market prices.²³

It should be noted that alcohol referred to here as stolen from enterprises is not always used for private gain. Managers frequently use alcohol as a bonus or an inducement to workers (see Section 5). Large quantities of alcohol are sometimes used by managers in exchange for scarce parts or materials [Belov 1955, 143-144; Izvestia, May 31, 1981, 2]. In

many of these cases, the managers have no choice but to falsify records or otherwise conceal the improper use of alcohol, but they do it in the interest of the enterprise without profiting personally.

4. ABUSES IN TRADE

Profitable illegal transactions involving alcoholic beverages are very frequent in consumer trade and in public dining establishments such as restaurants and bars. There seems to be an endless number of various profitable schemes, plots, and deals designed by sales personnel and middlemen to cheat the state and the drinker.

The reasons for the high incidence of abuse in consumer trade in alcoholic beverages are the same as in many other "left" economic activities in the USSR. Prices of alcoholic beverages are high because of the high turnover tax rates; accordingly, procuring bogus vodka, inferior wines or other beverages made from stolen alcohol and selling them at state prices is very profitable. The second factor is the numerous government rules and restrictions regulating the sale of alcoholic beverages. It is relatively easy for trade personnel to circumvent these rules, and they earn a premium for doing it. The fact that state trade employees are among the lowest paid in the USSR makes them particularly prone to succumb to the temptation of profitable illegal transactions.

The restrictions placed on the sale of alcoholic beverages opened many opportunities for profitable operations. The 1972 anti-drinking decree limited the sale of vodka to hours between 11 a.m. and 7 p.m., prohibited sales of alcoholic beverages in numerous areas, such as in the proximity of schools, railroad stations, industrial enterprises and hospitals, and

restricted the sales to only a few types of stores [Spravochnik . . . 1973, 182-185].

Thus, buying vodka in state stores and reselling it during restricted hours or in localities placed off limits became profitable. These transactions take many forms. In some cases the sales personnel simply violate the rules, selling vodka at a premium during off hours, through the back door.²⁴ In other cases middlemen not connected with trade organizations purchase vodka during regular hours and resell it after hours or in prohibited areas. Some of these middlemen set up their own small distribution centers in their apartments [Tkachevskii 1974, 131]. Taxi drivers carrying vodka in their trunks available to any thirsty customer are mentioned particularly often as middlemen.²⁵

The émigré survey is revealing in this respect; of 943 respondents who answered this question, 59 percent reported that illegal sales of vodka in restricted areas take place often, 32 percent said that illegal sales take place seldom, and only 9 percent said such sales do not take place.

Of the 1,007 émigré families surveyed, 315 or 31 percent reported having purchased annually on the average 9.9 liters of vodka through middlemen. Depending on the assumptions concerning the buying patterns of the entire urban population, it would mean that in the late 1970s between 6.6 and 14.8 percent of all vodka sold in state stores in cities was handled through middlemen or purchased illegally from sales clerks during off hours. The average price for vodka purchased "on the left" was 12.36 rubles per liter, amounting to a premium of about 50 percent over the state retail price. The illegal income of middlemen generated through their sales in urban areas can then be estimated between 600 and 1,300 million rubles per year²⁶.

The resale of vodka at a premium is the most frequent and the best documented illegal activity in the liquor trade sector. Many other abuses are reported in the Soviet press, but their scale is almost impossible to ascertain.

Probably the next most frequent practice producing comfortable profits for all parties involved is the sale of bogus vodka, made from stolen alcohol, and of adulterated wines, made by private producers and distributed through the regular state retail trade channels. A special variant of this practice in public dining facilities should be mentioned. In 1970, the price of vodka and some other beverages sold in restaurants was raised by 50 percent over the retail trade price [New York Times, February 24, 1970, 4; Reuters, July 1, 1970]. To insure the control over correct pricing, the labels of beverages sold through restaurants were marked by special stamps by the distributor. The black market operators immediately began to produce similar stamps for the restaurant personnel. Armed with this stamp, a waiter would buy a bottle of vodka in a retail trade store, stamp it, and sell the vodka to his customers, pocketing a 50 percent profit margin [Vremia i my, No. 25, 1978, 50-51]. The officially state-stamped vodka remained on shelves or was sold in small quantities to satisfy state inspectors.

The list of examples of cheating of buyers of alcoholic beverages in stores and of drinkers in bars is endless. Watering down of beverages and sometimes selling plain water in sealed vodka bottles, shortchanging customers by selling underfilled glasses, selling bogus vodka and wines, overcharging by means of substituting inferior brands, and padding of bills of drunk customers have been mentioned more than once.²⁷

An interesting court case illustrating the extent of abuse in liquor trade was reported in Tallin [SI, April 25, 1981, 3]. A special "Volunteer Peoples' Team" was formed to aid the city police in checking on alcoholic beverage sales in restaurants and bars. The team would enter a bar, pretend to find irregularities and demand a pay-off from the bartender. Apparently, the cheating of customers was so common, as well as profitable, that the bartender, whose state wage was about 100 rubles per month, without hesitation would pay the extortionists between 100 and 250 rubles. An almost identical story was reported five months later in the same city of Tallin [Trud, September 30, 1981, 4].

There are numerous other abuses and violations in trade in alcoholic beverages reported in the Soviet press, such as selling to minors, to inebriated customers, or in stores and public dining facilities where the sale of alcohol is prohibited. The extent of these violations can best be illustrated by the following report on drunks admitted to sobering-up stations in one district of Karaganda in 1977 [Beisenov, 1981, 26]. The culprits were drinking and got drunk in:

- Dining halls, cafes, luncheonettes, and tea rooms where drinking of alcoholic beverages is prohibited by law	2,937 persons
- Restaurants, where the serving of strong alcoholic beverages is limited to 100 grams per customer	370 persons
- Liquor stores (which do not allow drinking on premises)	775 persons

We do not know the total number of drunks admitted to the sobering-up stations or even the population of this particular district, so generalizations are impossible. However, if 4,082 drunks apprehended by the police have been drinking in violation of public dining and trade rules

and regulations, we could speculate that many times this number had violated the rules without getting drunk and/or ending up in sobering-up stations.

According to another report, 80 percent of minors who were arrested while committing a crime in a state of intoxication purchased the liquor themselves in retail trade outlets ["Sotsial'no-pravovye ..." 1980, 125].

It must be pointed out, however, that in all probability many of these violations did not necessarily result in direct illegal financial gain to the sales personnel involved. The planning and the system of bonuses and premia in Soviet retail trade establishments are based on gross ruble sales. Maximization of sales of alcoholic beverages -- which are expensive and do not require particularly intensive work efforts -- is thus to the advantage of trade personnel, who try to push the sales as much as possible [Powell 1978, 150-154].

It is, of course, possible, indeed probable, that in most instances the sales personnel and waiters extract some payment from the customers served against the law, but a partial explanation for the frequency of these violations lies in the nature of performance indicators of the trade system.²⁸

5. VODKA AS MONEY

A fascinating aspect of the Soviet alcohol culture which is closely related to the second economy is the apparent emergence of vodka as a "commodity money" or "second currency". This phenomenon is observed particularly often in private and illegal transactions.

The appearance of a commodity money, i.e., money which could be used as a medium of exchange and the standard value or could be consumed, is

not, of course, a new phenomenon. The usual reason for the emergence of the second currency is the loss of confidence in the official monetary system, and/or the fact that the purchasing power of the official currency has been impaired, such as during periods of political upheaval and inflation. Thus, American cigarettes served as commodity money in the immediate post-World War II period in Germany and Italy; some transactions were still conducted in almost worthless Reichsmarks or lire, but a supplementary payment of a certain number of packs of American cigarettes was necessary to complete the transaction.²⁹

Needless to say, the USSR is not experiencing a period of marked political instability, and inflation in the consumer goods sector, while noticeable, is far from what it was in post-war Europe. Nevertheless, the use of vodka as money has been growing and, as the documentation below will show, is now probably more widespread than was the use of American cigarettes as money in Germany and Italy.

Vodka is an almost ideal commodity monetary unit for the Soviet society. With close to 90 percent of adults being drinkers [Segal 1977, 6], very high per capita consumption of alcohol and almost universal appeal to Soviet drinkers, vodka represents a real, i.e., "consumable," value to practically everybody. It is available in sufficiently small "denominations" -- half-liter bottles -- to be used efficiently in most transactions. And, as Galbraith [1975, 250-251] put it with respect to cigarettes used as money, vodka is self-regulating in value: if the supply grows too fast, exerting a downward pressure on the goods/vodka exchange rate, the holders of vodka (holders of liquid assets?) can simply drink it, thus restoring the value of the second currency.

Vodka is probably a reasonably effective store of value. It is, needless to say, somewhat bulky, but it does not deteriorate in storage, while periodic price increases assure its appreciation and compensate the holder for the interest forgone. And, of course, it can be always consumed as vodka.³⁰

One reason why the stronger commodity monetary unit is not being driven out by the weaker legal tender is that the two currencies have their own separate markets where each dominates, and a general market where they circulate alongside each other. For instance, in post-war Germany and Italy the cigarette money tended to be used mainly in the gray and black markets for goods and in the consumer service sector; we observe the same pattern in the USSR.

One of the primary reasons for the emergence of a commodity money is the inherent weakness of the Soviet ruble. Unlike the currency in a market economy, the ruble cannot always be expected to be exchanged for a desired set of goods at known prices. The combined effect of inadequate production of consumer goods, of the inefficient and inflexible state distribution system, and of state pricing policies results in perennial or periodic shortages of a large number of consumer goods. Some of the goods which are not available in state retail stores may appear in various gray and black markets, but even this is not always certain as, by their very nature, these markets are disorganized, with fluctuating prices and periodic shortages. Uncertainties in the supply of consumer goods are particularly prevalent in rural areas and in small towns. Thus, rubles in the pocket of the Soviet consumer are by no means a guarantee that the desired set of goods will be purchased: the consumer may have to resort to extra-market

means such as queuing, tracing the desired goods to different localities, or searching for a black market.

Accordingly, the real value of money measured in terms of alternative sets of goods which can be purchased with it is always somewhat uncertain to the Soviet consumer.³¹

Soviet retail stores are always well stocked with vodka, and supply disruptions, so common with other goods, are almost unknown. However, vodka still has a certain shortage value in that the Soviet consumer cannot buy it anytime, anywhere. Starting in 1958, the hours of sale of vodka were restricted to 10 a.m. to 8 p.m., and banned from certain type stores and localities [Spravochnik . . . 1959, 407]. These restrictions were tightened in 1972 and the hours were further cut to 11 a.m. to 7 p.m. [Spravochnik . . . 1973, 184]. A Western visitor to Moscow in the late 1960s described the scenes in liquor stores just before the deadline as "one of the most grisly and telling spectacles . . ." when "the almost frenzied horde pushes, claws, fights its way toward the counter".³²

Thus, a bottle of vodka, offered as a supplementary payment for a service or a favor, has a definite value above its standard ruble price.

The use of vodka as money is explicitly recognized in the USSR, as can be illustrated by the following examples from newspaper reports, novels, short stories and émigré reports. "Vodka and homemade samogon have all but replaced money as legal tender in some kolkhozy in the Voronezh oblast" [Trud, October 27, 1972, 4]; "Vodka is now a monetary equivalent, as you know . . . Monetary unit - one bottle" [Semenov 1980, 48]; "Vodka is the general equivalent, look at it as second money . . ." [Ubogii 1978, 25]; "Alcohol is the white liquid gold in the USSR. Alcohol is the currency ("valiuta") which opens the doors of all organizations" [Gollakhovskii

1979, 7]; "Vodka or samogon are used as means of payment, as a second currency" [GIC 10-80 AB].

Astute Western observers have also noted this. For instance, Hedrick Smith of the New York Times referred to vodka as "that universal currency of Russian life" and reported that a "half-liter bottle of vodka is better than cash as pay for odd jobs" [1976, 71 and 120].

In addition to being used as a medium of exchange, vodka often serves as a unit of account. The humorist, Grigori Gorin, has been entertaining the audience of the famous Raikin theater with a story of a husband working out his family budget for the coming month in the following manner: "three bottles for new shoes, a half-bottle for a trip to the movies, two bottles for the daughter's violin lesson, etc." [LG, October 1969, 11]. The translation of ruble values into alcohol units is frequently mentioned in a brilliant play by a recent Soviet émigré author, Williams [1980, 93-124].

Recent Soviet and émigré literature offers several examples of instances when vodka or alcoholic beverages are used to measure the value of a human being. Consider the following story of a director of a telephone company in a small town. As the telephone system was being changed to automatic exchanges, the various town officials began fighting for telephone numbers commensurate with their status. The director finally ended the fights by introducing the following set of telephone numbers. The first secretary of the party was assigned number 4-12 (the price of a bottle of cognac); the second secretary received number 3-12 (the price of a bottle of expensive Stolichnaja vodka); the chairman of "railspolkom" was assigned number 2-87 (the price of the inexpensive Moskovskaia vodka) and so on down to the director of the telephone company himself taking the number 0-22 (the price of a glass of beer) [Losev 1977, 282-283]. Whether

the story is apocryphal or not really does not matter. But it is difficult to envisage another society where such a story would make any sense! Similar stories with references to measuring the worth of a human being in terms of alcohol have been appearing in other writings.³³

In its "purest" form, vodka is used as a supplementary, sometimes as the main, payment for a service rendered to a private individual or a household by the private or the state sector. Thus, in dealing with plumbers, electricians, painters, and other repair and maintenance personnel, the customer agrees to supplement the fixed money payment with vodka. In these cases vodka serves as a standard of value in that the number of bottles given is roughly proportional to the value of the service, e.g., a bottle for a simple plumbing job, several bottles for more demanding electrical repairs, and a case of vodka for painting an apartment.

In rural areas samogon has partially replaced vodka as means of payment. According to an authoritative source, 15.5 percent of arrested samogon makers gave "payments to hired workers" as reason for the illegal home distillation [Boldyrev et al. 1966, 22]. The practice was sufficiently widespread to force the Supreme Court of the USSR to declare that production of samogon to be used "as money for payment for work, in settling debts, or in exchange for goods" must be interpreted as production for commercial purposes and thus carry higher penalties [Sbornik. . . Part 2, 1978, 232].

The frequency of the use of vodka as money is increasing. Krododil referred to this phenomenon 84 times in stories and cartoons in the 1956-1980 period, with the larger share of references falling in the 1970s. The frequency with which the use of vodka in payment for legal and illegal

services is described in the literature is also rapidly increasing, testifying to the growth of the practice.

The émigré survey was equally revealing. Of 976 respondents who answered the question, 60 percent indicated that vodka is used often as means of payment for private services, 34 percent said that it happens infrequently, and 6 percent said that it is not done. The use of vodka as a supplementary payment for "left" services is apparently even more widely spread. Of 979 émigré respondents who answered the question, 83 percent reported that the practice is frequent, 14 percent said that vodka is used seldom, and only 3 percent said that the practice is not known.

Acceptance by state service employees of vodka as a supplementary payment is, strictly speaking, illegal, but there is little evidence that the state makes any attempt to police these transactions. In all probability, both parties involved would claim that vodka was offered as a gratuity, making prosecution difficult.

There is, however, another category of cases where the state employee is, in fact, involved in a criminal act induced by a reward in the form of vodka. Thus, state truck drivers move the household effects of private citizens, sovkhoz tractor drivers plough private plots, mechanics repair privately owned cars and provide them with stolen spare parts, construction workers supply builders of private houses with stolen construction materials, a dentist in a state hospital provides expensive metal for a bridgework, an inspector approves a poorly done job, a university professor passes a failing student -- all this for one or several bottles of vodka. Instances of such deals abound in literature.³⁴

It is interesting to note that in many of these transactions, a bottle of vodka becomes almost a token payment without regard to the value of the

transaction. The Literaturnaiia gazeta reported a court case of a storeroom keeper in a glassware store who would steal for a customer a piece of china needed to complete the customer's set in exchange for one half-liter bottle of vodka (or its equivalent of 4 rubles) regardless of the value of the item being stolen [Naumov 1981, 16].

These cases involved the use of vodka in transactions between private individuals and other private individuals or state employees. Equally frequent is the use of vodka as a supplementary payment or as an inducement within the state sector, when employees agree to perform the task for which they are responsible by the terms of their jobs only upon the gift of a bottle. Thus, the automobile mechanic will repair the car belonging to the enterprise, the electrician will wire the new machine, the stock clerk will find the scarce item, only upon a promise of a gift of a bottle.³⁵

Enterprises which utilize alcohol for technical purposes will use it as a payment-in-kind for minor repair and other odd jobs [Lukomskii 1965, 21] or as an additional payment for overtime work by their workers [G4K 1-81 P3; T2T 6-81 RR].

In rural areas samogon is used to reward the peasants. It was reported that some kolkhoz chairmen would allocate grain to home distillers and even credit them with "labor days" so they would provide samogon for the celebration of the harvest season [Belov 1955, 143-144; Boldyrev et al., 1966, 24-25].

The evidence of management providing vodka to workers to induce higher productivity is also given in the émigré survey. Of the 816 respondents to the question, 44 percent reported that vodka is used often, 39 percent said that it is used seldom, and only 17 percent said that they did not hear of the practice. In addition, 88 respondents who occupied managerial

positions in the USSR before they left reported that they had personally provided vodka to subordinates at an average rate of about 3 liters per month.

With all this evidence, it is not surprising that Soviet specialists have reported that the largest share of drinking is done not during the leisure time, but working hours [Anashkin 1980, 3].

As was mentioned above, the use of vodka as money is particularly widespread in second economy markets and in the criminal underworld. It is, therefore, not surprising that we find this practice associated with prostitution in the USSR. According to several reports, prostitutes frequently charge a bottle of vodka for their services or expect the customer to supplement the payment made in rubles with vodka.³⁶ In fact, prices of 3, 5, and 7 rubles charged by Soviet prostitutes in the early 1970s according to Stern [1980, 196] are just about equal to average prices of 0.5, 0.7, and 1.0 liter bottles of vodka. The similarity with post-war Europe, where prostitutes charged a carton of American cigarettes is, again, striking (see footnote 29).

In many of the instances described above the transfer of vodka from one person to another can be interpreted as a bribe. Indeed, vodka is used extensively in bribes, particularly as one element (in addition to money or goods). A survey of Krokodil shows a total of 30 cartoons and stories where vodka is used exclusively or as part of a bribe of officials, managers, and other authorities. It is quite clear that very often the bottle of vodka plays only a symbolic role in that its value is insignificant compared with the overall magnitude of the bribe. But the act of passing this bottle from the person seeking the favor to the person providing it establishes some bond of trust between the parties to the

illegal transaction. Soviet specialists have noted this culturally-established tradition of "covering" with alcohol "the procedure of bribing, or protection peddling, and illegal deals" ["Sotsial'no . . ." 1980, 115; SR, March 23, 1980, 3; Beisenov 1981, 45]. The use of vodka as a means of establishing trust between different parties has been noted by Western observers [Smith 1976, 120].

This phenomenon apparently has a long tradition. Dunns reported that "vodka has a ritual significance . . ." for Russian peasants and "was used to ratify and sanctify all bargains . . ." noting that it has retained its role [1967, 121]. An earlier Soviet study of alcoholism in rural areas noted that vodka was used to seal deals among peasants with "a shared drink" meaning signing of a contract [Voronov 1926, 26].

This is perhaps one of the main reasons why the use of vodka as second currency is particularly evident in various gray and black markets and in the world of graft, crime and corruption. With the real or imagined excessive police surveillance and conditioned to see informers almost everywhere, the people dealing in the second economy need some assurances that all parties involved are to be trusted.

The role played by vodka in the second economy is very complex. On the one hand, it serves as the second economy's main currency and facilitates transactions. On the other hand, heavy drinkers and alcoholics who cannot afford to satisfy their habit out of their legal income resort to various shady deals and engage in second economy activities because it is the only relatively easy way for them to earn more money for alcohol.³⁷

The phenomenon of the use of vodka as money is highly complex and one cannot fully understand it without expanding the inquiry to the sociological, historical, and cultural roots of its development. Confining

the analysis to economics, and fully aware of its limitations, this author can still advance several tentative propositions concerning the implications of the use of vodka as money.

The use of vodka as the second currency clearly facilitates small transactions in the second economy, attracts labor to the sphere of illegal activities, and generally leads to expansion of corruption and graft.

It leads to increasing alcohol abuse and heavy drinking by making vodka more readily available to a certain segment of the society, by frustrating government attempts to control drinking, and by encouraging samogon production and the theft of industrial alcohol from places of employment.

The circulation of a second currency -- vodka -- must also result in the reduced efficiency of the state distribution mechanism, distort cost calculations in both private and state sectors, and increase the difficulty of managing labor resources.

The overall impact of the use of vodka as money on the Soviet monetary system is difficult to assess. Part of the problem is that even in a crude analysis based on the quantity theory of money, vodka would be present both as a product on the Q·P side of the equation of exchange and as a component of money supply on the M·V side. Intuitively one could argue that an expansion of monetary uses of vodka will contribute to inflationary pressures in the Soviet consumer sector by increasing the supply of money and by facilitating a larger value of transactions, particularly in the second economy markets.

Let us consider one case: suppose that in a given year the planning and monetary authorities have achieved a perfect balance between ruble income of the population and the value of state produced consumer goods

measured in state-fixed "legal" prices. However, a certain share of vodka purchased legally in state stores is not consumed but used as means of payment for goods and services in the second economy markets. The intended balance will be disturbed by the increase in supply of "vodka money", pushing prices up in these markets but also creating a cash overhang in legal markets triggering off illegal price increases, i.e. increases above the state-fixed level of prices. This would be true even if the state-fixed price of vodka were to remain constant. In fact, vodka more than doubled in price in the last 25 years (Trembl 1982, 26).³⁸ Because of the indivisibility of "vodka money" (which comes only in 0.5, 0.75, and 1.0 liter bottles) an increase in the state price of vodka automatically raises the ruble value of goods and services which are customarily purchased with "vodka money", compounding the inflationary effects described above.

Problems created by the use of vodka as money can be illustrated by the following example. In 1981, Soviet monetary authorities, concerned with increasing cash balances and the repressed inflation, announced sharp price increases for a number of consumer goods. Prices of all alcoholic beverages were raised by 17-27%. If the mechanism described above does operate, the inclusion of vodka in price increases made the measure counterproductive. The increase in the price of vodka meant in effect a depreciation of the paper ruble, which is in the public's mind, so to speak, on a vodka standard, and thus did not have the desired deflationary effect. This and a rapid growth in the production of samogon can probably explain why the authorities announced in the midst of Andropov's 1981 anti-drinking campaign a cut in the price of vodka -- the first cut in vodka prices in some 30 years.

6. SOURCES AND BIBLIOGRAPHY

NOTES ON SOURCES AND BIBLIOGRAPHICAL REFERENCES

1. Some estimates and quantitative references made in this study are based on data provided by a questionnaire used in a survey of 1,007 recent Soviet émigré families now living in the U.S. The survey was conducted as a part of an ongoing research project on the second economy in the USSR at the University of California (Berkeley) and Duke University. At the time this study was being prepared the comprehensive data base for normalization of various variables provided by the questionnaire was not yet completed. The survey-derived estimates used in the study were normalized on the basis of a tentative set of statistics of 1979 adult population and labor force broken down by republics.
2. The author used a number of special sources such as communications from or interviews with Western visitors to the USSR, Soviet citizens, and recent émigrés from the USSR. Whenever the identity of the source had to be protected, it was done by means of a 9-digit code designed for the general use of the "Second Economy" project. The supporting documents, communications, notes and tapes are on file with either of the two universities. The use of coded sources in the text is made for the author's reference only, and these sources are not listed in the bibliography.
3. The use of literary sources in documentation of various alcohol abuse issues analyzed in this study may be questioned by the reader. The

author agrees with the late Professor Gerschenkron [1962, 296-317], that given the general shortcomings of Soviet historical and economic scholarly literature, the use of belles lettres for general background and evaluation of specific phenomena is indispensable. Better Soviet authors -- all the restrictions of state censors notwithstanding -- try to make their descriptions of everyday life in the USSR as true as possible, and specific observations or recurring references to certain phenomena are as valid, in the opinion of the author, as, say, reported court proceedings or facts given in Pravda. This would be particularly true of negative aspects of Soviet life, where the censors and editors are especially prone to use the red pencil.

The increasing frequency with which Soviet fiction authors refer to uses of vodka as payment for legal and illegal services (see pp. 29-30 above) is, in the opinion of the author, significant evidence of how widely spread the practice is.

4. Short announcements, newspaper reports, and cartoons or stories from the journal Krokodil, which contain only one or two simple items or references, are included only in the text by the name of the newspaper or journal and the date of publication and are not listed in the bibliography. Newspaper and journal articles of more general interest are cited in the text, and a full reference including the author's name will be found in the bibliography.

5. The following abbreviations will be used for titles of frequently cited Soviet newspapers and journals:

LG - Literaturnaia gazeta

KP - Komsomol'skaia pravda

NS - Nash sovremennik

SI - Sotsialisticheskaia industriia

SR - Sovetskaia Rossiia

NOTES

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2. Samogon (literally: "self-distilled") is a Russian colloquial term for a vodka-type alcoholic beverage varying in alcohol content from 25 to over 50 percent, distilled from grain, flour, sugar, potatoes, and a variety of other products. Synonymous terms are "pervach" (literally: first batch in the distillation process), and "sivukha" (derived from the Russian word for fusel oils). There are several other types of distilled, strong home-made beverages found in different regions of the USSR such as "chacha" distilled from by-products of wine making (Caucasus), "tutovaia vodka", distilled from mulberries, and "araka", distilled from various fruits or rice (Central Asia). The terms "braga" and "brazhka" refer to malt-type beverages made from fermented flour or bread with hops and yeast and varying in alcohol content from 3 to 6-7 percent. "Brazhka" is also used to denote the fermenting mash used in samogon making and is sometimes drunk without distillation.

3. The Tsarist government decreed a total prohibition of production of alcoholic beverages at the eve of the war, and this prohibition was initially left in effect by the new Soviet government. Wine-making was resumed in 1921, and the production of beer was allowed in 1922. Finally, in August, 1925, the government resumed production and marketing of vodka.

4. On the ignorance of authorities about the magnitude of samogon production, see Shumskii 1973, 6, and Sovetskaia Moldaviia, August 15, 1972, 4.

5. The high prices of alcoholic beverages in the USSR are explained by sales or turnover taxes which are some of the highest in the world. The tax rate on vodka was about 88 percent of the retail price in the 1970s, and rates on beer and wine products ranged from 50 to 65 percent [Tremi 1982, 29-32].

6. Bush used average gross earnings, less income tax, less social security contributions, less medical and unemployment insurance, plus family allowances. The expenditure estimates are based on per capita expenditure on alcoholic beverages in Tremi [1982, 75-78], the wage and family budget statistics published in Narodnoe khoziaistvo, and the standard assumption of two working adults per family, with the second wage earning member of the family receiving between 50 and 60 percent of the wage of the first [Rimashevskaiia 1965, 24 and Fedorenko and Rimashevskaiia, eds., 1979, 96-107].

7. See notes on Sources, Section 6, for explanation of the coded references.

8. In imperial Russia only ethanol made from grains and potatoes was used in the production of vodka. Small quantities of molasses-based ethanol were used for industrial purposes and for export [Vol'shanskii et al. 1977, 42].

9. The above discussion is based on Tremi [1982, 40-45]. Some 19 percent of the respondents in the émigré survey reported hearing about the use of synthetic ethanol in the production of vodka, and some had direct and personal knowledge of this practice. This percentage is surprisingly high considering the shroud of secrecy covering the use of synthetic ethanol in the USSR and the fact that most of the families interviewed were from urban centers in the Western regions of the USSR where the marketing of this type of vodka is less likely.

10. These rates are based on large-scale 1928 survey data in Cherliunchakevich [ed., 1929, 39] and verified against some recent data.

11. Zhmyrev and Larionov 1971, 4; Krokodil, No. 3, 1972, 4; Pravda, February 9, 1978, 4 and September 10, 1981, 3; SI, March 11, 1982, 2.

12. While the state price of sugar remained constant, procurement and kolkhoz market prices of grain, potatoes, sugar beets and other commodities used in the production of samogon were rising, thus adding another reason to switch to sugar in samogon-making.

13. Soviet specialists found high correlation between rural-urban migration and increases in per capita consumption of alcohol ["Sotsial'no . . ." 1980, 115-117].

14. Rural-urban migration started in the USSR in the late 1920s. However, the introduction of samogon-making into cities by migrating peasants did not take place earlier because sugar prices were much higher relative to prices of potatoes, grain, and of other vegetables until the mid-1950s.

15. As quoted in Klianin [1980, 2]. The ditty does not explicitly refer to samogon, but the implications are quite clear. In the Russian original, the ratio is given as "eight liters per half-pood," i.e., the standard ratio of samogon-makers. The home distillers test the proof of their brew by setting it afire (the mixture of water and alcohol must have at least 50 percent alcohol to burn) and hence the reference to the "blue flame" which is frequently encountered in samogon folklore [Krokodil, No. 5, 1961, 3; No. 8, 1974, 14].

16. [Ugolovnyi . . . 1957, 118]. We cite the criminal Code of the RSFSR which is used as a model for criminal codes of other republics. As a rule these follow the general trend set in the RSFSR code with minor variations.

17. The average quantity of samogon and mash seized in the Ukraine in 15 court cases reported in Matyshevskii [ed. 1980, 79-95] was about 160 liters. According to another source giving a sample of samogon raids by

the police, an average quantity of samogon confiscated per samogon apparatus seized varied between 4 and 9 liters [Tkachevskii 1974, 125]. In contrast, the average quantity of moonshine and mash seized per illegal still in the U.S. in the late 1970s was 1,235 liters [Hyman et al. 1980, 10].

18. The use of equipment in samogon making varies from case to case. A study of illegal distillation in 12 regions in 1958 showed that some 22 percent of samogon makers did not use any specialized equipment [Boldyrev et al., 1966, 22], thus presumably employing the method of freezing used in the U.S. in producing "hard cider".

19. The reference here is to the practice of Nepmen of hiring an elderly person as a "Sitz-predsedatel'," the nominal manager, who would go to jail were the enterprise to be charged with law infringement. The term was popularized in Il'f and Petrov's novel Zolotoi telenok.

20. No. 4, 1958, 8; No. 15, 1959, 12; No. 7, 1961, 4-5; No. 20, 1961, 15; No. 28, 1965, 6; No. 1, 1967, 11.

20a. Theft of alcohol takes place in all branches of the economy and by people virtually of all occupations except agriculture. Accordingly, the survey-derived data on quantity of alcohol stolen averaged by republics were reweighted on the basis of 1979 non-agricultural labor force by republics. The total estimate of 144.5 million liters of stolen alcohol was adjusted upward to account for non-agricultural sovkhos and kolkhos

occupations and for employed pensioners who were excluded from the labor force data.

21. Trud, March 28, 1976, 2; KP, March 28, 1976, 2; Krokodil, No. 8, 1977, 14; Pravda, January 19, 1978, 3; SR, March 23, 1979, 3; Gudok, August 28, 1979, 2; KP, May 31, 1980, 2; SI, July 9, 1980, 4 and July 29, 1980, 2; Pravda, August 8, 1980, 4; Trud, November 14, 1980, 4; SI, January 20, 1981, 4; Izvestia, February 16, 1982, 3; Trud, January 3, 1982, 2; Trud, February 3, 1982, 4; SI, March 4, 1982, 3; Trud, March 27, 1982, 2.

22. Krokodil, No. 10, 1958, 4; No. 24, 1968, 10; No. 30, 1979, 14; Boldyrev and Pergament, eds., 1980, 132.

23. A former director of a Moscow traumatological clinic, now in the U.S., reports the use of ethanol for purposes other than production of alcoholic beverages at more than 2 billion liters, (i.e. somewhat higher than my estimate of 1.6 billion liters) and estimates that one half of this quantity is stolen and drunk [Goliakhovskii 1979, 7]. The estimate appears to be unacceptably high but is still quite interesting, as it comes from a man with a first-hand experience with people suffering from the effects of alcohol abuse -- injured, poisoned, etc. -- and his perception of the order of magnitude of theft of alcohol cannot be dismissed lightly.

24. Krokodil, No. 17, 1967, 7, and No. 30, 1972, 4; Kommunist Tadzhikistana, June 22, 1972, 2; Nikolaev 1974, 152-153; Tkachevskii 1974, 131; Sovetskaia Litva, March 4, 1978, 4; Trud, January 1, 1980, 2; KP, May

31, 1980, 2; Pravda, October 20, 1980, 4; March 18, 1981, 3; July 12, 1981, 6; July 21, 1981, 3; GIG 8-79 T.

25. Observer 1971, 346; LG, August 30, 1972, 16; Krokodil, No. 27, 1973, 2-3; No. 31, 1973, 8; No. 36, 1975, 10; Ivanov 1977, 58; Stern 1980, 197; Chernenko 1981, 4; Kozlovskii 1981, 213; Kontinent, No. 28, 1981, 70; Novoe Russkoe Slovo, May 21, 1981, 4; SR, June 5, 1981, 4; LG, July 1, 1981, 13; The American Spectator, October 1981, 24.

26. The lower estimate was obtained on the basis of purchases per adult broken down by republics and reweighted by adult populations of the republics in 1979. However, in this instance we may be facing a problem of a bias. The émigré sample is dominated by Jews who, as a rule, are moderate drinkers. This can be seen by comparing the average sample expenditure on alcoholic beverages of 99.66 rubles per adult per year with the USSR urban average of 222.65 rubles [Tremi 1982, 49]. It would be reasonable to assume that, as a rule, purchases through middlemen are roughly proportional to overall expenditure on alcoholic beverages. Accordingly, we will adjust the émigré data upward to account for the "Jewish bias" by a factor of 2.23 by which USSR urban average expenditure exceeds that of the sample. This gives us the upper range of the estimates. The average price paid to the middleman given in the text could be somewhat low: a recent Soviet source reporting on the case with which vodka could be bought in Moscow after hours, cited prices from 20 to 40 rubles per liter [Chernenko 1981, 4].

27. Krokodil, No. 23, 1963, 13; Sovetskaia Kirgiziia, November 4, 1972, 4; Krokodil, No. 28, 1974, 4; Izvestia, August 21, 1974, 3; Tkachevskii 1974, 134; International Herald Tribune, October 30, 1978, 4; Pravda, August 26, 1979, 3; Krokodil, No. 8, 1980, 5; SR, August 20, 1980, 4; Trud, September 12, 1980, 4; G3Kh 8-81 LSh43; Pravda, October 4, 1981, 3; G3Kh 8-81 MT 22; Trud, December 9, 1980, 4; Izvestia, October 28, 1981, 6; Pravda, January 5, 1982, 3; LG, February 3, 1982, 16; Trud, May 6, 1982, 4.

28. Starting in 1981, sales of alcoholic beverages were excluded from plan fulfillment indicators and from incentives funds in state trade organizations [Pravda, October 20, 1981, 4]. It is, however, too early to say what effect the new rule will have on the behavior of trade personnel, particularly as there have been some reports of violations [Pravda, October 16, 1981, 3].

29. I am not referring here to the well-known case of the use of American cigarettes as money in a POW camp in Italy described by Radford [1945, 189-201]. In Radford's case cigarettes were the monetary unit, as lire were not used at all. For a short description of the use of cigarettes as money in post-war Germany, see Einzig [1966, 298-300], and Galbraith [1975, 250-251]. An excellent graphic description of the use of American cigarettes as money in black and gray markets of post-war Europe by a contemporary is found in Sandulescu [1974, 19 and passim].

On a much more modest scale, a "deck" or small package of marihuana worth about \$10 has emerged as a commodity monetary unit in the drug subculture in the US in the late 1970s.

30. Storage of vodka presents problems only to the few teetotalers. Krokodil [No. 14, 1970, 5] carried a cartoon showing a living room where every inch of space -- floor, window sills, furniture -- was filled with vodka bottles. The woman pictured amid these hundreds of bottles explained her predicament: "My husband is an excellent plumber, but he does not drink"

31. In a recent article a Soviet journalist lamented the disappearance of "a good Russian word 'to buy', which is being replaced by an almost meaningless 'to procure'." He complains that "the same amount of money acquires different values" depending on circumstances. "One can earn a higher salary and have less if one does not have the skills 'to procure'." [Samokhvalov 1980, 4].

32. [Observer, 1971, 346]. It should be noted that this was reported before the 1972 anti-drinking decree which introduced further restrictions and made vodka even more difficult to obtain.

The link between the ruble and alcohol has been noted in the unofficial folklore in the USSR. The decree restricting the hours of vodka sales was announced shortly after the Mint issued a new one-ruble coin picturing a gesticulating Lenin with his right hand stretched to 11 o'clock and his left hand pointing to 7 o'clock. The irreverent Russian drinkers maintain that Lenin was reminding them of restricted hours of alcohol sales.

33. See Vladimov 1982, 356-357; LG, February 3, 1982, 16; and May 19, 1982, 16.

34. Krokodil, No. 29, 1962, 12; No. 25, 1967, 1; No. 36, 1965, 11; No. 24, 1974, 4; No. 26, 1969, 11; No. 26, 1977, 6; Trud, October 27, 1972, 4; Likhodeev 1972, 224-247; Tkachevskii 1974, 116; Shukshin 1975, 125; Molodoi kommunist, No. 7, 1976, 74; Boldyrev and Pergament, eds. 1980, 91; Novyi mir, No. 5, 1981, 72; NS, No. 4, 1981, 136; No. 5, 1981, 116; No. 6, 1981, 107; No. 8, 1981, 141; No. 10, 1981, 163-164; Druzhba narodov, No. 6, 1981, 213; No. 10, 1981, 199; and No. 11, 1981, 3; Pravda, October 22, 1981, 6; Trud, January 5, 1982, 2.

35. Trud, February 13, 1973, 3; Krokodil, No. 18, 1978, 3 and No. 8, 1979, 2-3; Trud, January 2, 1979, 4; Efimov 1979, 182; Kandel' 1979, 98 and 101-103; Pitts 1980, 18-19; Kashtanov 1981, 43, 48, 55; Neznanskii and Topol' 1981, 143; Nilov 1981, 141; Popov 1981, 46; NS, No. 4, 1981, 136; Pravda, March 9, 1982, 3.

36. Maramzin 1979, 76; Semenov 1980, 48; Stern 1980, 194 and 199; Popov 1981, 129.

37. Five percent of drunks placed in sobering-up stations were seeking "left" earnings to pay for alcohol according to one survey [Chernysheva, ed. 1972, 87]. The link between drinking and second economy earnings was also noted in NS, No. 11, 1981, 144; Pravda, August 22, 1981, 3; and NS, No. 2, 1982, 21.

38. Increases in vodka prices are important in yet another respect. Interest rates on savings accounts in the USSR are, on the average, about 7.5% per annum, and increases in vodka prices since the late 1950s have

more than compensated the consumer who has kept his wealth in vodka rather than in savings accounts.

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APPENDIX A.

Estimation of the Value of Illegally Produced Alcoholic Beverages
and of Other Illegal Transactions and Services Associated with
Alcohol in 1979

Millions of Rubles

1. <u>Samogon</u>		
a.	<u>Revenues</u> . Production of samogon for consumption within producing households, sale, or barter measured in purchasers' prices. 1,645 million liters at 4.6 rubles per liter	7,567
b.	<u>Cost to producers</u> . Cost of sugar, flour, yeast, fuel, etc. all purchased legally in retail trade. 1,645 million liters at 1.0 rubles per liter	1,645
c.	<u>Loss to the state</u> . Cannot be estimated but probably small.	--
2. <u>Home-made Grape Wine</u>		
a.	<u>Revenues</u> . Production of 600 million liters of wine at 1.5 rubles per liter.	900
b.	<u>Cost to producers</u> . Cost of grapes at the average state procurement price of 304 rubles per ton.	200
c.	<u>Loss to the state</u> . Cannot be estimated but probably negligible.	--
3. <u>Home-made Fruit and Berry Wines</u>		
a.	<u>Revenues</u> . Production of 750 million liters at 1.0 ruble per liter.	750
b.	<u>Cost to producers</u> . Cost of apples, sugar, yeast, fuel and possibly some stolen or home-distilled alcohol estimated at about 0.4 rubles per liter.	300
c.	<u>Loss to the state</u> . Cannot be estimated but probably negligible.	--

<u>4. Home-made Beer and braga.</u>	<u>Millions of Rubles</u>
a,b,c. Cannot be estimated but production probably in tens of million liters	
<u>5. Sales of Alcoholic Beverages through Middlemen</u> (including both middlemen not associated with state liquor trade such as taxi drivers and liquor store employees selling "through the back door.")	
a. <u>Revenues.</u> Estimated as 10.7 percent of total sales of vodka or 305 million liters at average black market price of 12.36 rubles per liter.	3,770
b. <u>Cost to producers.</u> Estimated as 305 million liters at state retail price of 7.11 rubles per liter. Other costs assumed to be negligible.	2,169
c. <u>Cost to the state.</u> None	0
<u>6. Theft of Ethanol</u> (Sale or personal use of ethanol stolen from places of employment or from producing enterprises and sale of bogus vodka or other alcoholic beverages made out of stolen alcohol)	
a. <u>Revenues.</u> Estimated at 225 million liters at 11 rubles per liter	2,475
b. <u>Cost to producers.</u> Cannot be estimated but probably small.	--
c. <u>Cost to the state.</u> Total cost is estimated as theft of 225 mill. liters times average enterprise price of 0.6 rubles per liter. It will be assumed that one half of stolen alcohol comes from stocks earmarked for production of intermediate goods and one half from stocks in production of final goods.	135
<u>7. Illegal services in retail trade.</u> (Serving drinks to intoxicated customers and to minors for a premium, watering down beverages, overcharging intoxicated customers, selling vodka purchased at retail store prices in restaurants and pocketing restaurant surcharges, selling empty bottles on the side, etc.)	

	<u>Millions of Rubles</u>
<u>7.a. Revenues.</u> Calculated as roughly estimated illegal income of 2,400 rubles per year times estimated 814,000 sales personnel dealing with alcoholic beverages.	1,954
b. <u>Costs to producers.</u> Cannot be estimated but probably small.	--
c. <u>Cost to the state.</u> Cannot be estimated but probably in millions of rubles.	
<u>8. Auxiliary Services</u> (Production and sale of home distillation equipment, dealing in empty bottles, production of fake labels for bogus vodka, home production of yeast for home-made wines, etc.) Cannot be estimated but total sales must be fairly high.	--
Total gross revenues	17,416
Total cost to producers (materials only) more than	4,314
Total cost to the state ¹	more than 135

Note on sources : most of the estimates shown above are from the author's study "Alcohol in the Soviet Underground Economy", June, 1985 which was prepared as a part of the University of California/Berkeley - Duke University study of the second economy in the USSR. Estimation of revenues generated in state trade (line 7.a.) is not included in the study.

¹ Cost to the state includes only direct losses such as theft of material inputs. No attempt was made to estimate indirect or potential losses of turnover taxes or profits on state produced beverages which were replaced by illegal alcohol.

Adjustments in GNP incorporating homemade alcoholic beverages and other illegal services associated with alcohol underground:

Soviet GNP, 1979 ¹	617 billion rubles
Consumption	336
Investment & government	281

Adjustments in consumption:

1. Consumption of legal goods and services as recorded	336 billion rubles
2. Less legal purchases of material inputs into production of illegal beverages and associated services.	- 3.4
3. Plus gross sales of illegal alcoholic beverages and services	+17.4
4. Adjusted consumption	350
5. Adjusted GNP	631.

The value of home-produced alcoholic beverages and associated illegal services thus comprised 5.0 percent of adjusted consumption.

¹1979 GNP was estimated approximately on the basis of 1980 GNP calculated by CIA (1983, p. 2) using 1979-1980 rate of growth of official Soviet NMP.