Informal Economy Activities of Soviet Households: Size and Dynamics

Byung–Yeon Kim
University of Essex
bykim@essex.ac.uk

PERSA Working Paper
No. 26

Political Economy Research in Soviet Archives

Informal Economy Activities of Soviet Households: Size and Dynamics

Byung-Yeon Kim

Department of Economics, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, United Kingdom
E-mail: bykim@essex.ac.uk

Keywords: informal economy, Soviet households, Soviet Union
JEL Classification: O17, P20, P24.

Suggested running heads: Informal Economy in the Soviet Union

Correspond to: B-Y Kim, Department of Economics, University of Essex, Wivenhoe Park, Colchester, CO4 3SQ, United Kingdom. Tel: 44-1206-872777. Fax: 44-1206-872724. E-mail: bykim@essex.ac.uk.

*: I gratefully acknowledge the financial support of the British Economic and Social Research Council (Grant no. R000222463).
Informal Economy Activities of Soviet Households: Size and Dynamics

Abstract

Using unpublished archival data from Soviet family budget surveys, this paper estimates the size of the informal economy of Soviet households from 1969 to 1990, and compares the size of the Russian informal economy in the pre-transition period with that in the transition period. In addition, it provides an estimate of the size of households’ informal economy in each former Soviet republic in 1989. It finds that the average household expenditure in the informal economy, as a share of total household expenditure, was 23% from 1969 to 1990, contributing an additional 6.8% to Soviet Gross National Product. However, the share did not increase over time, even after the start of transition towards a market economy. It also finds a substantial variation among Soviet republics in the size of the informal economy.

Keywords: informal economy, Soviet households, Soviet Union

JEL Classification: O17, P20, P24.
1. Introduction

One of the major unanswered questions about the former Soviet economy was the size and dynamics of the informal, so-called “second” economy.\(^1\) In spite of a substantial amount of anecdotal evidence, Soviet sources failed to provide reliable estimates about the size of the informal economy. Using cross-section surveys of Soviet emigrants to the United States or Israel in the 1970’s, several Western economists attempted to estimate the size of households’ informal economy activities.\(^2\) However, their studies were limited to the estimates of the informal economy at one point of time and were not able to show its dynamics. In this regard, Treml and Alexeev (1994)’s study is noteworthy: they presented the first quantitative evaluation of trends in the size of the informal economy, and found evidence of increases in households’ informal economy activities over time. However, because of data limitations, they had to rely on indirect evidence based on cross-section regressions rather than showing the trend directly.

A better understanding of Soviet households’ informal economy would require data that are representative of the entire population and provide direct estimates of the size of the informal sector for a long period. However, no data have been made available so far which meet these requirements. It is known that the Soviet Central Statistical Administration (TsSU) conducted continuous family budget surveys (FBS) from the early 1950’s onwards. This is the only dataset that was designed to be representative of the entire population of the Soviet Union (Kim, 1999). Since regular surveys had been conducted until the collapse of the Soviet Union, it is possible to trace the dynamics of the informal economy. These suggest that the Soviet family budget surveys data (FBSD) provide a unique opportunity to study the informal economy of Soviet households. However, the detailed figures from this dataset were treated as confidential by the Soviet regime and were thus unavailable to Western or Soviet researchers.

This paper uses recently acquired Soviet FBSD archival material to estimate the size and dynamics of households’ informal economy from 1969 to 1990. We exploit the detailed nature of the FBSD on the informal economy: they include information not only on a number of components of income and items of expenditure, but also on how much income was received from various sources (state enterprises/organizations, kolkhozy, fellow citizens), and how much money was spent on the same sources. We evaluate the size of households’ informal economy in terms of not only household income or expenditure but also value added in the national accounts. Second, the size of households’ informal economy in each of the former Soviet republics is estimated. This analysis will cast some light on the initial conditions of the former Soviet republics at the start of their transition toward a market economy. Third, we compare the size of the Russian informal economy in the pre-transition period with that in the transition period.

The structure of the paper is as follows. In Section 2, we discuss existing studies of the Soviet informal economy. Section 3 describes the Soviet FBSD and our dataset, and assesses their reliability. In Section 4, we estimate the size and trend of

---

\(^1\) Because the term “second” economy is established among Sovietologists, we use informal and second economy interchangeably.

\(^2\) Households’ informal economy represents only part of the informal economy as a whole. Yet one can claim that households’ activities in the informal economy reinforce informal economy activities in other sectors such as the enterprise sector, and vice versa. Thus, the dynamics of informal economy activities in the household sector could reveal the trend of such activities in other sectors.
the informal economy, explain its diversity across Soviet republics, and compare the Russian informal economy in the pre-transition period with that in the transition period. Section 5 summarizes our main findings.

2. Studies on the Size of the Soviet Informal Economy

In spite of a large amount of anecdotal evidence of widespread informal economy activities throughout Soviet history, Soviet researchers only began to publish work on the informal economy in the 1980's. Figures provided by Soviet sources vary very widely, ranging from 50 billion rubles to 300-350 billion rubles a year in the late 1980’s (Koriagina, 1990; Golovin and Shokhin, 1990; Goskomstat SSSR, 1990). Nevertheless, neither Soviet researchers nor official statistical agencies explained how ‘informal economy’ was defined and what methodology was used in estimating it.

Western economists began to pay attention to the Soviet informal economy from the 1970’s. In a seminal paper, Grossman (1977) argued that the Soviet informal economy, which comprised both legal and illegal activities, was large and had been increasing in size since 1970. However, apart from citing the Central Intelligence Agency (CIA)’s estimates of the size of the legal private sector, his research was confined largely to conceptual and anecdotal discussions. Using fragmentary information appearing in the Soviet press, Grossman (1979) provided estimates of the size of several illegal private activities, such as bribes to buy a new car and the theft of fuel. O’Hearn (1980) also attempted to estimate the size of the informal economy for some specific consumer goods and services, by collecting information from Soviet press and relevant Western studies of the Soviet economy. According to his work, the market share of the second economy in the total amount of fish transactions and house repairs reached 25% and 70% respectively.

As the above discussion suggests, earlier work on the Soviet informal economy focused on the estimates of informal economy transactions of some consumer goods and services, rather than estimating the size of informal economy activities as a whole. The fundamental problem was data limitations: data deficiencies made it virtually impossible to make a reliable aggregate estimate of the size of the informal economy. However, if one uses only data for certain specific goods and services, it is difficult to draw any reliable conclusions about the real size of the informal economy and therefore the overall effect on the Soviet economy. News on goods and services that were frequently traded in the informal market was more likely to appear in the press. In addition, one might doubt the reliability of information provided by the Soviet press.

A major breakthrough was made on the aggregate estimates of the size of the informal economy, when data from the surveys of emigrants from the Soviet Union became available. There are three main datasets from the surveys of Soviet emigrants: the Israeli Soviet Interview Project (ISIP), the American Soviet Interview Project (SIP), and the Berkeley-Duke household budget survey on the second economy.

---

3 According to Soviet official statistics, gross national product (валовой национальный продукт) in 1986 amounted to 799 billion rubles (ТsSu, 1989). However, the exact amount of the contributions of informal economy activities to gross national product (GNP) cannot be revealed without information on the share of value-creating activities opposed to value-transfer activities.
The ISIP is concerned with the early 1970’s, and is based on surveys of Soviet emigrants to Israel. The SIP and BDHP refer to the late 1970’s and relate to surveys of emigrants to the United States. The interviewees in all three surveys were asked about their lives in the last ‘normal’ year in the Soviet Union, which was defined as the last year before life started to be affected by the decision to emigrate.

Using the data from the ISIP, Ofer and Vinokur (1992) provided estimates of private sources of income of the Soviet urban household. Based on re-weighting by occupation to correct a sampling bias, they estimated that the share of private income of the Soviet household was 11.5% of total income, and that 18.1% of all consumption expenditure was paid to private individuals. Using a similar definition of private income, but based on the BDHB, Grossman (1987) found that, in the late 1970’s, private income of urban households comprised between 28% and 33% of total household income. It remains unclear whether the discrepancy between the two estimates can be explained by the rapid growth of the informal economy in the mid-1970’s, or by errors due to specific assumptions on statistical weights employed in normalization. As Treml and Alexeev (1994) suggest, results based on unrepresentative samples must be taken as first approximations.

An attempt to understand the dynamics of the Soviet second economy was made by Treml and Alexeev (1994). Using newly available official Soviet statistics aggregated by Russian and Ukraine regions, they analyzed the extent of the relationships between official money income of the population and dependent variables such as bank savings and expenditure. They used simple linear regressions on cross-sectional data of Russian and Ukraine regions from 1965 to 1991, to evaluate the linear dependency between official income and bank savings, and official income and sales of various goods in the state shops. The results show that the explanatory power of money income for the dependent variable had been declining over time, which they interpreted as evidence of a growing second economy in the USSR.

Although this study represents the first quantitative attempt to understand the dynamics of the Soviet informal economy, one can question the methodologies they used. First, results from a regression of sales of consumer goods on income are likely to suffer from omitted variables, such as changes in consumption habits and availability of other consumer goods. Second, weakening relationships between income and sales of consumer goods or savings might have been affected by increasing shortages of consumer goods over time (Kim, 1999). These drawbacks suggest that their evidence is not conclusive. A more desirable approach is to estimate the size and trend of the informal economy directly using data that are representative of the whole population.

---

4 The ISIP surveyed 1,250 Jewish Soviet families who emigrated to Israel in the mid-1970’s and reported retrospectively on their lives in the Soviet Union during their last ‘normal’ year there. See Ofer and Vinokur (1992). Millar (1987) offers a detailed summary of results of the SIP survey, which interviewed 2,793 Soviet emigrants to the United States. The vast majority of the interviewees emigrated to the United States between 1978 and 1981. The BDHB was based on interviews with 1,061 households who emigrated to the United States between 1976 and 1981. Several papers using the BDHB were published as a series of Berkeley-Duke occasional papers on the second economy in the USSR. However, the three surveys are not directly comparable because of a number of possible biases.

5 According to their definition, the private sector means all production activity on private account regardless of whether it is legal or illegal. Thus they included any income reported as earned privately in their estimation of ‘private income’.
3. **Family Budget Survey Data and Their Comparability with Macro Statistics**

The purpose of the regular FBS was to monitor changes in the living standards of the population. The sample size of the FBS was 62,000 - 90,000 families from 1969 to 1990. The survey was a rotating panel based on both interviews, which took place at least twice a month, and households’ diaries of detailed accounts of their income and spending. A core of families (about 80-85%) were retained as subjects of the survey for a number of years, while 15-20% of the households were replaced regularly, in order to achieve a better representation of the population. All adult members of the selected households were required to participate in the survey (Dmitrichev, 1992). Although some data on the distribution of earnings began to be published in the late 1980’s, the real figures from the results of the FBS are still not widely available in the published literature.

Detailed summary results of annual data from the FBS were obtained from three Russian archives: the Government Archive of the Russian Federation (Gosudarstvennyi Arkhiv Rossisski Federatsi); the Goskomstat Archive (Arkhiv Goskomstata); and the Archive of the Center for Information and Calculation Under Goskomstat (Arkhiv Tsentry Informatsii-Vychislenii).

The data, which cover the period from 1969 to 1990, include thirty-five income-related variables, sixty-two expenditure-related variables, and nine savings-related variables. There are two separate datasets: dataset on the families of Soviet workers and employees (rabochie and sluzashie) and that on the families of Soviet collective farm workers (kolkhozniki). Variables relative to income include salary income, benefits, monetary subsidies, money income from the sale of agricultural products, income from the sale of other items, income-in-kind from private plot activities, and other unspecified income. Data on expenditure are provided for food, non-food goods, alcohol, properties, livestock, various kinds of service or repairs, taxes, etc. In particular, each item of income and expenditure shows the source of the income (i.e., state enterprises/organizations, kolkhozy, fellow citizens) and to whom money passed. This information is very useful in tracing informal incomes and informal expenditures because most of such incomes and expenditures are related to transactions between individuals.

The reliability of the data was checked by comparing some items of the FBSD with published official statistics not derived from the FBSD. The results of this comparison show that the data are largely accurate. For example, as regards expenditure, the amount of annual tax payment appearing in the FBSD from 1969 to 1988 was compared with the amount of annual tax revenue from official statistics based on institutional records in the same period. It was shown that the differences between the two figures were small, with most of the differences remaining well below ±4%. The average of the ratio of data from the FBSD to the official aggregate data was 1.009, and the standard deviation was only 0.009. Regarding income, wage and salary income from the FBSD was compared with that in official statistics based on payroll records from enterprises, organizations, institutions and collective farms. Again, the differences were below ±2%, the average of the ratio being 0.996, and the

---

6 A detailed account of the data and sampling procedures can be found in Dmitrichev (1992) and Kim (1996).
7 To the best of my knowledge, Kim (1999) is the only published study to use real figures of Soviet archival material, Soviet FBS.
8 For the details of the conversion of the FBSD to macroeconomic series, see Kim (1999).
standard deviation 0.015. In both series, there were no clear error trends. Lastly, savings deposits in banks estimated from the FBSD were compared with those published in statistical yearbooks (NKh) based on banking statistics. The definition of an increase in bank savings in the FBSD is the difference between the total withdrawal of money from banks and the total deposit of money in banks in each year. As regards savings deposits in banks, there were much larger discrepancies compared to the previous two: the differences were below ±20% in most years. Yet, the null hypothesis, \( H_0 = 1 \), can still be accepted at the significance level 10% (average ratio: 1.06, standard deviation: 0.16).\(^9\)\(^10\)

4. Size and Dynamics of the Soviet Informal Economy

**Definition of the Informal Economy and the Scope of This Study**

Grossman (1977) defines the second economy as ‘all production and exchange activity that fulfills at least one of the following two tests: a) being directly for private gain; b) being in some significant respect in knowing contravention of existing law’. O’Hearn (1980) adds another aspect of the second economy: it operates outside the planning structure. Following the above discussion, informal economy activities are defined as activities that fulfill at least one of the above three tests.

Broadly speaking, there are three types of informal economy activities in terms of the unit of operation: households’ private activities, those of enterprises, and those of crime organizations.\(^11\) As the FBSD include only households’ activities, our research is concerned with the analysis of households’ informal economy activities. Thus, the informal transactions of socialist enterprises or organizations are excluded from our research. In a similar way, organized crime operated by non-household entities is not the object of this study.

Households’ informal economy activities include both legal and illegal activities. Prime examples of legal informal economy activities include consumption of self-produced food and the sale of agricultural products raised on private plots. Other examples include occasions when individuals hire other citizens to work for them as domestic employees. Tutoring, repair and construction of houses and garages, clothing, furniture, and carpet repair were also permitted. In contrast, wage labor for other individuals was not allowed. Private trading based on buying cheaply and selling at higher prices is an example of households’ illegal activities. Unlicensed private production and sales, embezzlement, and corruption are other examples of illegal activities.

\(^9\) There is some evidence that even in a Western developed country, savings reported in a household survey are substantially different from those measured in the national accounts (Attanasio and Weber, 1994). For example, Rossi and Shorrocks (2000) suggest that bank savings reported in the British Household Panel Survey underestimate real bank savings by 50 percent.\(^10\) We also attempted to compare real spending on alcohol appearing in the FBSD with estimates of pure alcohol consumption provided by Nemtsov (2000) from 1981 to 1990. Although the two figures are not directly comparable, because the latter provides estimates only in terms of pure alcohol consumption in liters, not expenditure, they display a similar trend until 1989: the correlation coefficient of the two is 0.938. Note that retail statistics on alcohol are also difficult to use for comparison, because they include a substantial “siphoning effect”; that is, the purchase of alcohol by enterprises and organizations with and without official sanction (Kim, 2002). Yet, as in the previous case, their trends from 1985 to 1989 were similar and the correlation coefficient was 0.867.\(^11\) Davis (1988) provides an excellent survey of different types of second economy activities in various sectors in the framework of shortage and disequilibrium models.
Informal Income and Expenditure

Informal income appearing in the FBSD can be aggregated to four different types of informal income: income in kind, income from the sale of agricultural products and animals, informal income from the state sector and kolkhozy, and other income from fellow citizens. Here the category of informal income from the state sector and kolkhozy includes income from contractual jobs in the state sector/kolkhozy and from the sale of goods other than food and animals to the state sector.\textsuperscript{12} The category of other income from fellow citizens includes all kinds of informal income, such as re-trading, rent income, tutoring, and private transfer. Informal household expenditure includes any payments to private individuals, whether legally or illegally, and the value of self-produced goods. It is classified into three categories: consumption of self-raised agricultural products, expenditure on food and animals paid to people, and expenditure paid to people except spending on food and animals.

We define the total personal income (TPI) of a household as the sum of all household income during the given period, whether earned or received as transfer, whether formal or informal, and whether in money or in kind. Total personal expenditure (TPE) is defined as the sum of money expenditure and consumption of self-produced goods.\textsuperscript{13}

In order to form a total population series, two separate datasets on budgets of workers and employees (rabochie and sluzashie) and those of collective farmers (kolkhozniki) were merged by using the proportion of each group in the population as weights. According to the data before merging, the average share of informal income for workers and employees from 1969 to 1990 was 9.6\% out of TPI, while that of informal expenditure out of TPE was 17.7\%. In contrast, the average share of collective farmers’ informal income out of TPI was 47.1\% during the same period and the share of informal expenditure out of TPE was 51.6\%.

Table 1 shows informal income and expenditure of average Soviet households.\textsuperscript{14} As in the ISIP emigrant survey, our estimates of informal expenditure are higher than those of informal income. One of the possible reasons is that respondents were more open about their spending in the informal economy than about their income from informal sources. Another reason would be that many households who worked in informal economy activities were not included in the survey while food, non-food goods, and services produced or provided by them were available for ordinary consumers. These two explanations imply that estimates from the expenditure side are closer to true figures.

\textsuperscript{12} Income from contractual jobs is derived from unspecified income from the state sector and kolkhozy. This income is reported after records of all possible sources of income and thus likely to be associated with informal economy activities.

\textsuperscript{13} In the original FBSD, consumption of self-produced goods was evaluated at the official government price. However, the official government price underestimated real price changes (Schroeder, 1972). In order to appreciate the actual value of consumption of self-produced goods, we multiplied consumption of self-produced goods by the ratio of real price index based on Kim (1996) to the official price index. According to the real price index, prices in the Soviet consumer rose by 42\% from 1970 to 1989, whereas the official Soviet price statistics appearing NKh suggest that they increased only by 14\% during the same period. Overall, the real price index is fairly similar to Central Intelligence Agency (CIA)’s retail price index (CIA, 1989).

\textsuperscript{14} Because it does not include pure pensioners’ families, total personal income and expenditure might be overestimated. Considering the fact that pensioners had participated in private plot activities more actively, some estimates of informal income and expenditure might well be underestimates.
While the average shares of informal income and expenditure of total income and expenditure were 16.3% and 22.9% from 1969 to 1990 respectively, they generally displayed downward trends over time until 1988. Note that this refers to the relative size of the informal economy as a proportion of total income or expenditure, not to its absolute size. Our evidence suggests that the absolute size of the informal economy had indeed increased from 1969 to 1990.\(^\text{15}\) The most important reason for a decline in the relative share of the informal economy was a decrease in the consumption of self-produced goods. In contrast, income from other people, apart from the sale of agricultural products, increased from 3.2% in 1969 to 4.9% in 1990. This indicates that other informal economy activities, such as private transactions between individuals, became more popular sources of income.

**Comparison with Other Estimates**

The three major surveys of emigrants from the Soviet Union conducted in Israel and the United States are not directly comparable with the FBSD for various reasons. First, the surveys, which cover only emigrants either to Israel or to the United States, are hardly representative of the whole population of the Soviet Union. Second, the estimates of the size of the informal economy are predominantly based on urban households’ activities. For example, Grossman’s estimates (1987), using the BDHB, are based on income and expenditure of urban households only. We take a simple approach and avoid complicated but arbitrary adjustments to compare the FBSD to the emigrant samples. That is, we compare our estimates based on an average Soviet family with the estimates based on the emigrant surveys, namely, the ISIP survey and the BDHB survey.\(^\text{16}\) Although our comparison is inevitably preliminary, it may help one to have a feel about the suitability of the FBSD for an analysis of the informal economy: if participants in the FBS were less willing to provide information on their informal economy activities than those in the surveys of Soviet émigrés, one would expect the FBSD to provide lower estimates of the size of the Soviet informal economy compared with the other surveys.

Ofer and Vinokur (1992)’s estimate suggests that in 1973, the share of income from the informal economy was about 11.5% of total income, and Grossman (1987) shows that the comparable figure for the late 1970’s was 28-33%. Our figures fall between the two, suggesting that the unwillingness of respondents to reveal their informal economy activities in the FBS, if any, was at least the same as in the ISIP. According to the FBSD, the share of income from the informal economy in 1973 was 18.4% of TPI. We estimate that the share of informal income out of TPI in the late 1970’s was about 16%, and that of informal expenditure out of TPE was 22-23%.

\(^{15}\) Our finding may appear not to be consistent with most of the anecdotal evidence that suggests that the informal economy grew over time. However, such evidence could have been related to an increase in its absolute size, rather than its relative size. In addition, anecdotal evidence on a sensitive issue such as the informal economy can merely reflect a decrease in the fear of repression perceived by the public, who thus became more willing to talk openly about informal economy activities. I am grateful to a referee for the suggestion of these points.

\(^{16}\) In order to check whether the coverage of informal economy activities appearing in the FBSD differs from those in other emigrant surveys, the ISIP and the BDHB, we compared components of informal income and expenditure available from the FBSD with those from the ISIP and the BDHB, suggested by Ofer and Vinokur (1992) and Grossman (1987), respectively. We found that the FBSD provide most components of informal income and expenditure suggested by the two surveys.
Value added of Informal Economy Activities in the National Accounts

One can ask to what extent existing Soviet Gross National Product (GNP) need to be revised by the inclusion of value added made in the informal economy. In order to evaluate the contribution of informal economy activities to GNP, we should add only part of the income from such activities which reflect new value added and are not accounted for in existing estimates. This means that we should subtract from aggregate income or expenditure earned or spent in the informal economy i) informal incomes/expenditures included in existing estimates, and ii) those parts of the sums that are not value added.

We first convert figures available from table 1 to national aggregates. The conversion is based on multiplying the figures by the Soviet population in the middle of each year and adjusting the aggregate figures by taking account of pure pensioners’ families not included in table 1.¹⁷ A next stage is to distinguish value-redistribution activities taking place in the informal economy from value added activities, and to subtract value added already included in existing estimates from total value added. For example, private transfer including bribes, as an example of value-redistribution activities, does not add value to the national accounts unless it induces recipients to exert extra effort for work. Costs of inputs for private production should be deducted because they are not value added. Re-trading, which refers to purchasing goods from state retail shops and reselling them at increased prices, should be excluded in order to avoid double counting in the national accounts.¹⁸ Cash income from private plot activities should be subtracted from value added activities to avoid double counting, because CIA estimates of Soviet GNP or the official estimates of national income produced, which we use to estimate Soviet GNP for the years when official GNP figures are not available, already include such income (CIA, 1975, 1989). In the same way, Soviet GNP includes household income from contractual jobs in the state sector/kolkhozy and from sale to the state sector, and thus such income is excluded from new value added.

Tables 2 and 3 present the amount of value added produced by households’ informal economy activities and its shares of total GNP, evaluated by using data on income and expenditure, respectively. According to the income-side approach, the average share of value added produced in the informal economy (the sum of value added already included in existing GNP and new valued added that was not included in it) from 1969 to 1990 is 7.9% of total GNP, which is defined as the sum of existing GNP estimates and new value added by the informal economy. New value added amounts to about 70% of value added that was produced in the informal economy and 5.6% of total GNP. The expenditure-side approach suggests that total value added and new value added generated in the informal economy, as a percentage of total GNP, is 8.7% and 6.4%, respectively during the same period. This difference is mainly due to the fact that the amount of payment to other people for non-food goods, services, etc (ETP in table 3) is higher than that of income from fellow citizens earned by selling or providing them (ITP in table 2).

¹⁷ In more detail, aggregate money income of households was estimated from multiplying the figures in table 1 by the number of the Soviet population. Then it was compared to aggregate money income, appearing in Kim (1999), which was adjusted to include pure pensioners’ families. The ratio between the two money incomes was applied to each figure in aggregate income and expenditure.

¹⁸ Increases in prices through re-trading can be included in value added when GNP is measured in prevailing prices, because it represents the actual spending of households. In contrast, when the concept of GNP at factor cost is used, they should be excluded, because retail sales valued at prices established by the government are already included in GNP. Following Kurtzweg (1987) and Ofer and Vinokur (1992), we take an approach by considering GNP at factor cost.
Both results from the income- and expenditure-side show that the Soviet informal economy as a percentage of total GNP had not grown over time. On the contrary, it displayed a generally downward trend until the late 1980’s when it started to pick up rapidly. A substantial decline in consumption of agricultural products as a share of total GNP, possibly due to a rise in the number of workers and employees against the number of kolkhozniki, played a significant role in keeping the trend down. Interestingly, the average growth rate of expenditure paid to people unrelated to spending on food and animals, which is likely to have been associated with illicit economic activities, was higher than that of total GNP. Although this can be viewed as some evidence of the formalization of the Soviet economy, its share of total GNP, which ranged between 2 and 5%, had remained rather small and been stable from 1969 to 1988.

Our estimates according to the expenditure-side approach indicate that the existing estimates of Soviet GNP are underestimated by 6.8%. Although it does not substantially change the relative size of the Soviet economy in comparison with that of the economy of the United States (US), it would certainly make a significant difference in the evaluation of the level of material well-being of the Soviet population. For example, the CIA estimates that consumption of the Soviet population in terms of end use of GNP was about 40% of the US level (Kurtzweg, 1987). In contrast, our new estimates suggest that it would be slightly less than 50%, on the basis of a reasonable assumption that all new value added produced by informal economy activities is added to consumption.

It would be interesting to reclassify different types of informal economy activities into three categories: informal production, illegal production and rent-seeking activities. Informal production includes all production activities in the informal economy, namely, consumption of products raised on private plots, production of goods sold to other people, and provision of services to other people. Thus, we define informal production as the sum of the value of self-consumption (CAP), the amount of expenditure on food and animals paid to people (ETA), and that on non-food goods and services paid to people (ETP). Illegal production, part of informal production activities, is mostly included in the production and sale of non-food goods to other people or the provision of paid services to other people. We define the size of illegal production as the amount of expenditure on non-food goods and services paid to people (ETP). Lastly, rent-seeking, which takes up resources but does not produce value added, can occur in the case of value redistributing informal activities. Most of these activities take the form of transfers among people, which suggests that the amount of private transfer (PRT) is used to measure rent-seeking.

We use the expenditure data presented in table 3 to show trends in informal production, illegal production and rent-seeking. Figure 1 displays expenditures belonging to each category as a proportion of total GNP (TGN) from 1969 to 1990. It suggests that informal production had tended to decrease over time. Although it had

---

19 This was calculated by dividing new value added generated in the informal economy by estimates of existing GNP appearing in table 3.
20 Note that this comparison is based on two implicit assumptions. First, the informal sector in the US did not exist in the relevant period. Second, the 1987 CIA estimates of relative consumption levels are accurate. The former assumption is unlikely to be valid and the latter one is highly controversial. Therefore one should consider our comparison as being very preliminary.
21 See Grossman (1977) and Feldbrugge (1984) to understand which private activities were legal and which were not.
22 Findings based on the income side are basically the same as those based on the expenditure side presented in the text.
increased rapidly since 1989, the share of informal production of total GNP in 1989 and 1990 did not reach to high levels displayed in the late 1960’s and the early 1980’s. Illegal production as a proportion of total GNP had been fairly stable in the 1970’s, but exhibited a decreasing trend from 1980 to 1986. Rent-seeking shows a general tendency to increase from 1969 to 1990: private transfer as a percentage of total GNP increased from 1.4% in 1969 to 2.2% in 1990. In particular, it had been very high during the Perestroika period. However, the overall magnitude of the effect appears to have been small, and it did not experience extremely rapid growth.

The above analysis implies that the different aspects of informal economy activities had not experienced an explosive growth: they had been either decreasing or at most slightly increasing from 1969 to 1988. This finding may indicate that the informal economy should be viewed as a consequence of malfunctioning central planning, rather than as a main cause of the collapse of the Soviet economic system.

Regional Diversity in the Soviet Union

One further interesting issue is how our estimates of the size of Russia’s informal economy just before the start of the transition can be compared with those of others such as Johnson et al. (1997). In order to estimate Russia’s informal economy during the transition period, they assumed that the size of the informal economy in 1989 was the same across all the Soviet republics including Russia. However, such an assumption is not in line with a traditional view of the Soviet informal economy, such as Grossman (1977, 1979, 1987) and Ofer and Vinokur (1992). For example, Grossman (1977, 1987) suggested that informal economy activities were more widespread in the south, less so in the west and north, and not so significant in the Baltics.

Table 4 presents the average of the share of new value added in the informal economy, that is, value added that was not included in existing GNP estimates, as a percentage of the GNP of each republic. As the table shows, the size of these activities varies substantially across republics. Estonia, Latvia, and Russia belonged to a group of republics where value added generated in the informal economy was low. In contrast, it was relatively high in Uzbekistan, Georgia, Azerbaijan, Kyrgyzstan, and Tajikistan. These findings contradict the assumption of an equal size of the informal economy as a share of GDP across former Soviet republics, but support the traditional view of substantial republican dispersion.

According to the expenditure-side approach in table 4, Russia’s informal economy in 1989 that was not captured in existing estimates of official GNP amounts to 3.5% of total GNP. Our estimate is quite different from that of Johnson et al. (1997) who assume it was 12% of GNP in the same year. They applied the same figure to all the Soviet republics and estimated the size of informal economies from 1990 to 1996. The diversity in the size of the informal economies we discussed above suggests this assumption is not tenable for Russia, and the change in this assumption by taking heterogeneity across republics into account will affect their estimates very significantly. Suppose that Russia’s informal economy was 5% of GNP in 1989, which is a similar figure to our estimate but makes some allowances for enterprises’ informal economy activities. The application of the growth rates of the informal

---

23 Note that some of value added produced in the informal economy was already included in the existing GNP estimates. All value added in the informal economy was about 5% of total GNP.
24 Although the size of informal economy activities conducted by Soviet enterprises is unknown, one can possibly argue that it was smaller than that by households. Some enterprises might have involved in the informal economy in the form of hidden sales, hidden profits, and unauthorized barter
economy derived from Johnson et al. (1997) to this figure will lead us to conclude that the size of Russia’s informal economy would only be about 20% of GNP in 1996 in contrast to Johnson et al.’s estimate, around 40% in the same year.25

Comparison with the Size of the Informal Economy in Russia During Transition

Several studies of Russia’s informal economy after the collapse of the Soviet Union imply that those activities are transition-induced rather than inherited from the past. For example, some economists suggest that Russian households’ informal economy activities were caused by the turbulent transition process, in which a majority of households experienced a substantial fall in their income (Desai and Idson, 1998; Rose and McAllister, 1996). It is thus interesting to know whether households’ informal activities have really grown during the transition period.

Two main sources are used to estimate the size of households’ informal economy during the transition period. The Russian Longitudinal Monitoring Survey (RLMS), which has been conducted from 1992, provides data on households’ informal economy activities.26 Another source is the Russian family budget surveys (RFBS) conducted by the Russian State Statistical Committee (Goskomstat Rossii, 1994). Unfortunately, the latter, which is available only in highly aggregated form, provides information purely on income from private plot activities.

Figure 2 shows the shares of income-in-kind and money income from the sale of products from 1985 to 1995. The FBSD, the RFBS, and the RLMS provide estimates for the years 1985-1990, 1991-1993, and 1992-1995 respectively. However, the RFBS and the RLMS use different categories of informal income. The RFBS provides data on the sum of income-in-kind from private plots and money income from the sale of agricultural products, while the RLMS includes all sources of income-in-kind and money income from the sale of agricultural products. Since all categories of income are available in the FBSD, we compare data from the FBSD with those from the RFBS and the RLMS.27

The most striking discovery from this comparison is that informal income from private plots or sale of products as a percentage of total income has not increased substantially during the transition period. The comparison of income-in-kind from private plots and money income from the sale of products between the FBSD and the RFBS shows that its share of total income from 1992 to 1993 was quite similar to that in 1990.28 Second, according to the comparison between the FBSD and
the RLMS, income-in-kind from all sources as a share of total income has decreased since the collapse of the Soviet economy. It declined from 10.5% in 1990 to 9.6% on average from 1992 to 1995. According to the RLMS, there is some evidence that the decline was influenced by an increasing share of cash income from the sale of products from 1994 to 1995. If the sum of money income from the sale of products and all sources of income-in-kind in 1990 recorded in the FBSD as a percentage of total income, is compared to that in the RLMS from 1992 to 1995, there was no substantial increase in its share except in the case of 1994. In fact, its share in 1990, 13%, is similar to the average share in the RLMS from 1992 to 1995.

In sum, the share of income-in-kind either from private plot activities or cash income from the sale of products had been fairly stable from 1985 to 1995. Although there is some evidence that cash income from the sale of products as a share of total income, has increased during the transition period, the share of the sum of informal income from income-in-kind and from the sale of products did not rise substantially. Several studies on households’ informal economy activities simply assume that such activities were driven by a survival motive of Russian households who had experienced a significant drop in their income. This hypothesis has to be re-evaluated in light of our finding, which suggests that widespread private plot activities in transitional Russia were path-dependent rather than induced by the turbulent transition process.

5. Conclusions

So far, no comprehensive or systematic estimates of the size and dynamics of the Soviet informal economy have been found in Soviet and Western sources. Using the Soviet archival material, i.e. Soviet family budget surveys, this paper has first provided estimates of the size of the Soviet households’ informal economy from 1969 to 1990, and evaluated value added generated in the informal economy in the national accounts. In addition, it has compared the size of the informal economy among fifteen former Soviet republics, and between the pre-transition period and the transition period.

We found that the average share of informal income as a percentage of total income from 1969 to 1990 was 16.3%. The average share of informal expenditure out of total expenditure amounted to 22.9% in the same period. In terms of value added in the national accounts, the Soviet informal economy can add 5.9% or 6.8% to Soviet GNP, depending on whether we use data from income or expenditure. Obviously, this is not a negligible figure. It suggests that existing Western and Soviet research, which attempts to estimate the level of household welfare and Soviet GNP, has to be re-evaluated in light of the implications of substantial informal economy activities.

However, the Soviet households’ informal economy, measured both by the respective share of informal income and expenditure out of total income and expenditure, and value added produced in the informal economy in the national

29 The estimates from the RLMS might have been affected by the seasonality of private plot activities. Unlike the FBSD, interviews for the RLMS were conducted in a particular month and interviewees were not asked to keep diaries.

30 Unfortunately, informal income apart from income relating to private plot activities in the FBSD is not directly comparable to that in the RLMS. The former can be defined as income from other fellow citizens while the latter provides information only on wages from secondary jobs and income from individual economy activities.
accounts, did not grow over time. In contrast, it showed a slight decreasing trend,
mainly because of decreases in the share of consumption of self-raised foods and the
sale of agricultural products and animals. Although there is evidence of increases in
these activities in the late 1980’s, general dynamics indicate that the informal
economy did not account for the collapse of the Soviet economy.

We found a substantial variation among Soviet republics in the size of the
informal economy. The share of new value added produced in the informal economy,
which refers to value added that was not included in GNP, as a share of GNP of a
republic, evaluated by the expenditure-side approach, varied from 1.5% in Estonia to
12.7% in Georgia. This implies that the initial conditions of transition countries from
former Soviet republics were highly heterogeneous.

One striking finding is that the share of income-in-kind and cash income from
the sale of products as a percentage of total income was stable in Russia even after the
beginning of the transition. This can be interpreted as evidence that widespread
private plot activities in contemporary Russia are historically inherited, to a large
extent, rather than being induced by the turbulent transition process. An interesting
question for further investigation would be whether and how features, motives, and
effects of households’ informal economy activities have changed in the transition
period.
References


Tsentralnoe Statisticheskoe Upravlenie (TsSU), *Narodnoe Khozaistvo SSSR* (National Economy of the USSR: NKh). various years.


Figure 1: Share of different types of informal economy activities
(as a percentage of total GNP)

Source: table 3.
Figure 2: Share of income-in-kind and income from the sale of products (as a percentage of total income)

Sources: FBSD; RLMS; Goskomstat Rossii (1994, p. 84).
<table>
<thead>
<tr>
<th></th>
<th>Total personal income (rubles)</th>
<th>Total personal expend. (rubles)</th>
<th>Self cons. (% of TPI)&lt;sup&gt;a&lt;/sup&gt;</th>
<th>income from sale (% of TPI)&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Informal income from state (% of TPI)&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Oth. income (% of TPI)&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Self cons. (% of TPE)&lt;sup&gt;e&lt;/sup&gt;</th>
<th>Food purch. (% of TPE)&lt;sup&gt;f&lt;/sup&gt;</th>
<th>Other expend. (% of TPE)&lt;sup&gt;g&lt;/sup&gt;</th>
<th>Informal income (% of TPI)&lt;sup&gt;h&lt;/sup&gt;</th>
<th>Informal expend (% of TPE)&lt;sup&gt;i&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>949.2</td>
<td>916.5</td>
<td>12.2</td>
<td>3.5</td>
<td>0.8</td>
<td>3.2</td>
<td>13.5</td>
<td>4.9</td>
<td>8.2</td>
<td>19.7</td>
<td>26.6</td>
</tr>
<tr>
<td>1970</td>
<td>1012.1</td>
<td>977.9</td>
<td>12.0</td>
<td>3.7</td>
<td>0.8</td>
<td>3.4</td>
<td>13.4</td>
<td>4.6</td>
<td>8.5</td>
<td>19.9</td>
<td>26.5</td>
</tr>
<tr>
<td>1971</td>
<td>1061.7</td>
<td>1027.5</td>
<td>11.6</td>
<td>3.6</td>
<td>0.8</td>
<td>3.5</td>
<td>13.0</td>
<td>4.1</td>
<td>8.5</td>
<td>19.5</td>
<td>25.6</td>
</tr>
<tr>
<td>1972</td>
<td>1096.8</td>
<td>1056.9</td>
<td>9.8</td>
<td>3.7</td>
<td>0.9</td>
<td>3.6</td>
<td>11.1</td>
<td>3.8</td>
<td>8.7</td>
<td>18.0</td>
<td>23.8</td>
</tr>
<tr>
<td>1973</td>
<td>1159.7</td>
<td>1117.5</td>
<td>10.5</td>
<td>3.3</td>
<td>0.9</td>
<td>3.7</td>
<td>11.9</td>
<td>3.8</td>
<td>8.6</td>
<td>17.3</td>
<td>24.3</td>
</tr>
<tr>
<td>1974</td>
<td>1208.1</td>
<td>1153.3</td>
<td>9.4</td>
<td>3.2</td>
<td>0.9</td>
<td>3.8</td>
<td>10.7</td>
<td>3.6</td>
<td>8.6</td>
<td>17.3</td>
<td>22.9</td>
</tr>
<tr>
<td>1975</td>
<td>1259.8</td>
<td>1200.2</td>
<td>8.9</td>
<td>3.0</td>
<td>1.0</td>
<td>3.8</td>
<td>10.2</td>
<td>3.6</td>
<td>8.6</td>
<td>16.7</td>
<td>22.4</td>
</tr>
<tr>
<td>1976</td>
<td>1303.9</td>
<td>1243.6</td>
<td>8.3</td>
<td>2.8</td>
<td>1.0</td>
<td>3.9</td>
<td>9.7</td>
<td>4.0</td>
<td>8.5</td>
<td>16.0</td>
<td>22.2</td>
</tr>
<tr>
<td>1977</td>
<td>1350.1</td>
<td>1291.2</td>
<td>8.3</td>
<td>2.9</td>
<td>1.0</td>
<td>3.9</td>
<td>9.9</td>
<td>4.1</td>
<td>8.7</td>
<td>16.1</td>
<td>22.7</td>
</tr>
<tr>
<td>1978</td>
<td>1389.8</td>
<td>1324.5</td>
<td>8.1</td>
<td>2.9</td>
<td>1.0</td>
<td>4.0</td>
<td>9.7</td>
<td>4.3</td>
<td>8.9</td>
<td>16.0</td>
<td>22.9</td>
</tr>
<tr>
<td>1979</td>
<td>1440.3</td>
<td>1376.3</td>
<td>8.6</td>
<td>3.0</td>
<td>0.8</td>
<td>3.6</td>
<td>10.3</td>
<td>4.5</td>
<td>9.0</td>
<td>16.0</td>
<td>23.8</td>
</tr>
<tr>
<td>1980</td>
<td>1491.7</td>
<td>1437.5</td>
<td>7.9</td>
<td>2.9</td>
<td>0.8</td>
<td>3.9</td>
<td>9.8</td>
<td>4.9</td>
<td>9.2</td>
<td>15.5</td>
<td>23.9</td>
</tr>
<tr>
<td>1981</td>
<td>1541.8</td>
<td>1489.0</td>
<td>8.0</td>
<td>2.9</td>
<td>0.8</td>
<td>4.0</td>
<td>9.9</td>
<td>5.0</td>
<td>9.1</td>
<td>15.7</td>
<td>24.0</td>
</tr>
<tr>
<td>1982</td>
<td>1581.0</td>
<td>1526.3</td>
<td>8.1</td>
<td>2.9</td>
<td>0.8</td>
<td>4.1</td>
<td>10.0</td>
<td>4.9</td>
<td>8.9</td>
<td>15.9</td>
<td>23.8</td>
</tr>
<tr>
<td>1983</td>
<td>1620.5</td>
<td>1552.3</td>
<td>7.8</td>
<td>3.1</td>
<td>0.9</td>
<td>4.0</td>
<td>9.8</td>
<td>4.5</td>
<td>8.5</td>
<td>15.8</td>
<td>22.8</td>
</tr>
<tr>
<td>1984</td>
<td>1640.3</td>
<td>1549.0</td>
<td>7.3</td>
<td>2.9</td>
<td>0.9</td>
<td>4.2</td>
<td>9.4</td>
<td>4.3</td>
<td>8.2</td>
<td>15.3</td>
<td>21.9</td>
</tr>
<tr>
<td>1985</td>
<td>1674.5</td>
<td>1582.8</td>
<td>7.0</td>
<td>2.7</td>
<td>1.0</td>
<td>4.4</td>
<td>8.8</td>
<td>4.1</td>
<td>8.1</td>
<td>15.1</td>
<td>21.0</td>
</tr>
<tr>
<td>1986</td>
<td>1725.0</td>
<td>1621.4</td>
<td>6.8</td>
<td>2.7</td>
<td>1.0</td>
<td>4.6</td>
<td>8.7</td>
<td>3.8</td>
<td>7.7</td>
<td>15.1</td>
<td>20.2</td>
</tr>
<tr>
<td>1987</td>
<td>1760.8</td>
<td>1654.8</td>
<td>6.5</td>
<td>2.6</td>
<td>1.0</td>
<td>4.6</td>
<td>8.3</td>
<td>3.7</td>
<td>7.8</td>
<td>14.7</td>
<td>19.8</td>
</tr>
<tr>
<td>1988</td>
<td>1786.8</td>
<td>1659.9</td>
<td>5.7</td>
<td>2.4</td>
<td>1.1</td>
<td>4.5</td>
<td>7.3</td>
<td>3.8</td>
<td>8.0</td>
<td>13.7</td>
<td>19.1</td>
</tr>
<tr>
<td>1989</td>
<td>1941.4</td>
<td>1801.2</td>
<td>5.8</td>
<td>2.5</td>
<td>1.2</td>
<td>4.7</td>
<td>7.6</td>
<td>3.9</td>
<td>8.5</td>
<td>14.2</td>
<td>20.0</td>
</tr>
<tr>
<td>1990</td>
<td>2205.6</td>
<td>2060.8</td>
<td>6.0</td>
<td>2.8</td>
<td>1.2</td>
<td>4.9</td>
<td>8.4</td>
<td>4.5</td>
<td>9.6</td>
<td>14.9</td>
<td>22.5</td>
</tr>
</tbody>
</table>

**Notes.**

<sup>a</sup> Share of consumption of agricultural products raised on own private plots out of total personal income

<sup>b</sup> Share of income from the sale of agricultural products and animals out of total personal income

<sup>c</sup> Share of informal income from the state sector and kolkhozy

<sup>d</sup> Share of other income from fellow citizens out of total personal income except income from the sale of agricultural products and animals to fellow citizens

<sup>e</sup> Share of consumption of agricultural products raised on own private plots out of total personal expenditure

<sup>f</sup> Share of food purchases from fellow citizens out of total personal expenditure

<sup>g</sup> Share of other purchases from fellow citizens out of total personal expenditure

<sup>h</sup> Share of informal income out of total personal income

<sup>i</sup> Share of informal expenditure out of total personal expenditure
Table 2: Different Types of Income and Value added in the Informal Economy in the National Accounts
(In bn rubles and percent)

<table>
<thead>
<tr>
<th>Year</th>
<th>CAP</th>
<th>IFA</th>
<th>IFS</th>
<th>INP</th>
<th>PRT</th>
<th>FRT</th>
<th>VAI</th>
<th>NVAI</th>
<th>GNP</th>
<th>TGN</th>
<th>SVI</th>
<th>SNVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>27.6</td>
<td>7.6</td>
<td>1.9</td>
<td>14.5</td>
<td>2.0</td>
<td>5.4</td>
<td>7.3</td>
<td>36.9</td>
<td>27.4</td>
<td>350.7</td>
<td>378.1</td>
<td>9.8</td>
</tr>
<tr>
<td>1970</td>
<td>29.5</td>
<td>8.8</td>
<td>2.0</td>
<td>13.3</td>
<td>1.7</td>
<td>6.2</td>
<td>5.0</td>
<td>40.7</td>
<td>29.9</td>
<td>388.2</td>
<td>418.1</td>
<td>9.7</td>
</tr>
<tr>
<td>1971</td>
<td>30.9</td>
<td>9.1</td>
<td>2.2</td>
<td>15.6</td>
<td>2.2</td>
<td>6.7</td>
<td>6.7</td>
<td>42.2</td>
<td>30.9</td>
<td>408.5</td>
<td>439.4</td>
<td>9.6</td>
</tr>
<tr>
<td>1972</td>
<td>26.8</td>
<td>9.7</td>
<td>2.4</td>
<td>16.6</td>
<td>2.3</td>
<td>7.3</td>
<td>6.8</td>
<td>39.1</td>
<td>27.0</td>
<td>420.0</td>
<td>447.0</td>
<td>8.7</td>
</tr>
<tr>
<td>1973</td>
<td>31.2</td>
<td>9.3</td>
<td>2.6</td>
<td>17.6</td>
<td>2.6</td>
<td>7.9</td>
<td>7.0</td>
<td>43.2</td>
<td>31.3</td>
<td>452.4</td>
<td>483.7</td>
<td>8.9</td>
</tr>
<tr>
<td>1974</td>
<td>29.2</td>
<td>9.5</td>
<td>2.9</td>
<td>18.3</td>
<td>2.6</td>
<td>8.5</td>
<td>6.9</td>
<td>41.9</td>
<td>29.5</td>
<td>474.1</td>
<td>503.6</td>
<td>8.3</td>
</tr>
<tr>
<td>1975</td>
<td>29.5</td>
<td>9.4</td>
<td>3.2</td>
<td>19.5</td>
<td>2.5</td>
<td>9.0</td>
<td>7.5</td>
<td>42.6</td>
<td>30.0</td>
<td>486.5</td>
<td>516.5</td>
<td>8.2</td>
</tr>
<tr>
<td>1976</td>
<td>28.7</td>
<td>9.2</td>
<td>3.4</td>
<td>22.5</td>
<td>2.5</td>
<td>9.7</td>
<td>9.5</td>
<td>42.1</td>
<td>29.5</td>
<td>516.5</td>
<td>546.0</td>
<td>7.7</td>
</tr>
<tr>
<td>1977</td>
<td>31.2</td>
<td>9.8</td>
<td>3.7</td>
<td>23.5</td>
<td>2.8</td>
<td>10.1</td>
<td>9.9</td>
<td>45.4</td>
<td>31.9</td>
<td>543.2</td>
<td>575.1</td>
<td>7.9</td>
</tr>
<tr>
<td>1978</td>
<td>32.1</td>
<td>10.4</td>
<td>3.6</td>
<td>25.1</td>
<td>3.1</td>
<td>10.8</td>
<td>10.6</td>
<td>46.7</td>
<td>32.7</td>
<td>570.9</td>
<td>603.6</td>
<td>7.7</td>
</tr>
<tr>
<td>1979</td>
<td>36.4</td>
<td>11.2</td>
<td>3.1</td>
<td>23.0</td>
<td>3.6</td>
<td>10.2</td>
<td>9.4</td>
<td>50.5</td>
<td>36.2</td>
<td>590.1</td>
<td>626.3</td>
<td>8.1</td>
</tr>
<tr>
<td>1980</td>
<td>36.2</td>
<td>11.4</td>
<td>3.2</td>
<td>27.2</td>
<td>3.7</td>
<td>11.5</td>
<td>11.7</td>
<td>51.1</td>
<td>36.5</td>
<td>619.0</td>
<td>655.5</td>
<td>7.8</td>
</tr>
<tr>
<td>1981</td>
<td>38.9</td>
<td>11.7</td>
<td>3.4</td>
<td>29.5</td>
<td>4.1</td>
<td>12.4</td>
<td>12.9</td>
<td>54.1</td>
<td>39.0</td>
<td>651.8</td>
<td>690.8</td>
<td>7.8</td>
</tr>
<tr>
<td>1982</td>
<td>40.8</td>
<td>12.0</td>
<td>3.6</td>
<td>30.1</td>
<td>3.9</td>
<td>12.9</td>
<td>12.7</td>
<td>57.0</td>
<td>41.4</td>
<td>701.0</td>
<td>742.4</td>
<td>7.7</td>
</tr>
<tr>
<td>1983</td>
<td>41.1</td>
<td>13.4</td>
<td>4.0</td>
<td>29.1</td>
<td>4.2</td>
<td>13.2</td>
<td>11.3</td>
<td>58.9</td>
<td>41.5</td>
<td>734.0</td>
<td>775.5</td>
<td>7.6</td>
</tr>
<tr>
<td>1984</td>
<td>39.7</td>
<td>13.1</td>
<td>4.3</td>
<td>30.6</td>
<td>4.1</td>
<td>14.1</td>
<td>11.6</td>
<td>57.9</td>
<td>40.5</td>
<td>762.8</td>
<td>803.3</td>
<td>7.2</td>
</tr>
<tr>
<td>1985</td>
<td>38.6</td>
<td>12.5</td>
<td>4.6</td>
<td>31.6</td>
<td>4.1</td>
<td>15.2</td>
<td>11.2</td>
<td>56.8</td>
<td>39.7</td>
<td>777.0</td>
<td>816.7</td>
<td>7.0</td>
</tr>
<tr>
<td>1986</td>
<td>39.5</td>
<td>13.1</td>
<td>5.0</td>
<td>32.7</td>
<td>4.0</td>
<td>16.4</td>
<td>10.6</td>
<td>59.1</td>
<td>41.0</td>
<td>798.5</td>
<td>839.5</td>
<td>7.0</td>
</tr>
<tr>
<td>1987</td>
<td>38.4</td>
<td>13.2</td>
<td>5.2</td>
<td>33.7</td>
<td>4.3</td>
<td>17.1</td>
<td>10.6</td>
<td>58.5</td>
<td>40.1</td>
<td>825.0</td>
<td>865.1</td>
<td>6.8</td>
</tr>
<tr>
<td>1988</td>
<td>34.2</td>
<td>12.9</td>
<td>5.5</td>
<td>36.1</td>
<td>4.8</td>
<td>17.1</td>
<td>12.8</td>
<td>54.0</td>
<td>35.6</td>
<td>875.4</td>
<td>911.0</td>
<td>5.9</td>
</tr>
<tr>
<td>1989</td>
<td>38.7</td>
<td>14.7</td>
<td>6.2</td>
<td>39.7</td>
<td>4.8</td>
<td>19.4</td>
<td>13.1</td>
<td>62.0</td>
<td>41.1</td>
<td>943.0</td>
<td>984.1</td>
<td>6.3</td>
</tr>
<tr>
<td>1990</td>
<td>49.2</td>
<td>18.9</td>
<td>7.2</td>
<td>48.7</td>
<td>5.2</td>
<td>23.1</td>
<td>18.7</td>
<td>78.9</td>
<td>52.8</td>
<td>1000.0</td>
<td>1052.8</td>
<td>7.5</td>
</tr>
</tbody>
</table>

Note:
CAP: the value of consumption of agricultural products raised on own private plots
IFA: income from sale of food products and animals produced by households
IFS: income from the state sector and kolkhozy as a form of contractual jobs
ITP: income received from other people excluding income from sale of food products and animals
INP: input costs
PRT: private transfer
FRT: food re-trading
VAI: value added in the informal economy (CAP+IFA+IFS+ITP-INP-PRT-FRT)
NVAI: new value added that is not included in existing estimates of Soviet GNP (VAI-IFA-IFS)
GNP: Gross National Product
TGN: total GNP (GNP+NVAI)
SVI: share of value added in the informal economy out of total GNP (VAI/TGN)
SNVI: share of new value added in the informal economy out of total GNP (NVAI/TGN)
\( a\) Input cost is defined as the sum of expenditure on fodder, seeds, and animals to feed.
\( b\) Income from private transfer (income from friends and relatives) was consistently higher than expenditure on private transfer. We use expenditure on private transfer for both tables 2 and 3 because income from private transfer is likely to include income from informal economy activities.
\( c\) The value of food re-trading refers to income from sale of food that is not originated from households’ private plot activities and is obtained by subtracting total income from the sale of food to people from total expenditure on food sold by people.
\( d\) Soviet official estimates of national income produced and CIA estimates of GNP include income from the sale of food products and animals (IFA) (Kim, 1996; Kurtzweg, 1987; CIA, 1989). In the same way, Soviet official estimates of national income produced include income from the state sector and kolkhozy as a form of contractual jobs (IFS) (Kim, 1996). Therefore, we exclude IFA and IFS in new value added generated in the informal economy (NVAI).
\( e\) GNP series for the years of 1980 and 1985-1990 are from TsSU. Series for other years were estimated by calculating the average ratio between national income produced in 1980 and GNP in 1980 and applying the ratio to Soviet official series of national income produced. The comparison between CIA estimates of GNP and our simple estimates suggests a slight difference. For example, the CIA estimated Soviet GNP in 1976 was 505 bn rubles while we obtain 516.5 bn rubles for the same year (Edwards et al., 1979).
Table 3: Different Types of Expenditure and Value added in the Informal Economy in the National Accounts
(In bn rubles and percent)

<table>
<thead>
<tr>
<th>Year</th>
<th>CAP</th>
<th>EFA</th>
<th>ETP</th>
<th>INP</th>
<th>PRT</th>
<th>VAI</th>
<th>NVAI</th>
<th>GNP</th>
<th>TGN</th>
<th>SVI</th>
<th>SNVI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969</td>
<td>27.6</td>
<td>10.3</td>
<td>7.4</td>
<td>5.4</td>
<td>7.3</td>
<td>40.6</td>
<td>30.3</td>
<td>350.7</td>
<td>381.0</td>
<td>10.7</td>
<td>8.0</td>
</tr>
<tr>
<td>1970</td>
<td>29.5</td>
<td>10.6</td>
<td>19.4</td>
<td>1.7</td>
<td>6.2</td>
<td>46.6</td>
<td>36.0</td>
<td>388.2</td>
<td>424.2</td>
<td>11.0</td>
<td>8.5</td>
</tr>
<tr>
<td>1971</td>
<td>30.9</td>
<td>10.1</td>
<td>20.8</td>
<td>2.2</td>
<td>6.7</td>
<td>46.2</td>
<td>36.1</td>
<td>408.5</td>
<td>444.6</td>
<td>10.4</td>
<td>8.1</td>
</tr>
<tr>
<td>1972</td>
<td>26.8</td>
<td>10.0</td>
<td>22.0</td>
<td>2.3</td>
<td>7.3</td>
<td>42.4</td>
<td>32.4</td>
<td>420.0</td>
<td>452.4</td>
<td>9.4</td>
<td>7.2</td>
</tr>
<tr>
<td>1973</td>
<td>31.2</td>
<td>10.1</td>
<td>23.0</td>
<td>2.6</td>
<td>7.9</td>
<td>46.8</td>
<td>36.7</td>
<td>452.4</td>
<td>489.1</td>
<td>9.6</td>
<td>7.5</td>
</tr>
<tr>
<td>1974</td>
<td>29.2</td>
<td>10.1</td>
<td>24.2</td>
<td>2.6</td>
<td>8.5</td>
<td>45.5</td>
<td>35.4</td>
<td>474.1</td>
<td>509.5</td>
<td>8.9</td>
<td>6.9</td>
</tr>
<tr>
<td>1975</td>
<td>29.5</td>
<td>10.8</td>
<td>25.4</td>
<td>2.5</td>
<td>9.0</td>
<td>46.7</td>
<td>35.9</td>
<td>486.5</td>
<td>522.4</td>
<td>8.9</td>
<td>6.9</td>
</tr>
<tr>
<td>1976</td>
<td>28.7</td>
<td>12.5</td>
<td>26.3</td>
<td>2.5</td>
<td>9.7</td>
<td>45.8</td>
<td>33.3</td>
<td>516.5</td>
<td>549.8</td>
<td>8.3</td>
<td>6.1</td>
</tr>
</tbody>
</table>

Note.
CAP: the value of consumption of agricultural products raised on own private plots
EFA: the amount of expenditure on food and animals paid to people
ETP: the amount of expenditure paid to people excluding expenditure on food and animals paid to people
INP: input costs
PRT: the amount of private transfer
FRT: food re-trading
VAI: value added in the informal economy (CAP+EFA+ETP-INP-PRT-FRT)
NVAI: new value added that is not included in existing GNP estimates (VAI-EFA)
GNP: Gross National Product (see table 2 for the sources and the method of estimation)
TGN: total GNP (GNP+NVAI)
SVI: share of value added in the informal economy out of total GNP (VAI/TGN)
SNVI: share of value added in the informal economy out of total GNP (NVAI/TGN)
Table 4: Value added in Informal Economies in the Soviet Republics in 1989\textsuperscript{a}

(bn rubles, per cent)

<table>
<thead>
<tr>
<th>Republics</th>
<th>GNP \textsuperscript{(1)} \textsuperscript{b}</th>
<th>Value added – income side\textsuperscript{c} (2)</th>
<th>Value added – expenditure side\textsuperscript{d} (3)</th>
<th>Total GNP (4)\textsuperscript{(1)+(2)}</th>
<th>Total GNP (5)\textsuperscript{(1)+(3)}</th>
<th>Share of new value added (2)/(4)</th>
<th>Share of value-added (2)/(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>576.8</td>
<td>19.7</td>
<td>21.1</td>
<td>596.5</td>
<td>597.9</td>
<td>3.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Ukraine</td>
<td>155.1</td>
<td>10.8</td>
<td>11.8</td>
<td>165.9</td>
<td>166.9</td>
<td>6.5</td>
<td>7.1</td>
</tr>
<tr>
<td>Belarus</td>
<td>36.9</td>
<td>2.2</td>
<td>1.3</td>
<td>39.1</td>
<td>38.2</td>
<td>5.7</td>
<td>3.4</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>30.9</td>
<td>3.0</td>
<td>4.2</td>
<td>33.9</td>
<td>35.1</td>
<td>8.8</td>
<td>12.0</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>41.2</td>
<td>1.9</td>
<td>2.3</td>
<td>43.1</td>
<td>43.5</td>
<td>4.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Georgia</td>
<td>14.5</td>
<td>1.3</td>
<td>2.1</td>
<td>15.8</td>
<td>16.6</td>
<td>8.4</td>
<td>12.7</td>
</tr>
<tr>
<td>Azerbaycan</td>
<td>15.6</td>
<td>1.5</td>
<td>1.9</td>
<td>17.1</td>
<td>17.5</td>
<td>8.7</td>
<td>10.9</td>
</tr>
<tr>
<td>Lithuania</td>
<td>12.3</td>
<td>0.9</td>
<td>0.7</td>
<td>13.2</td>
<td>13.0</td>
<td>6.7</td>
<td>5.4</td>
</tr>
<tr>
<td>Moldova</td>
<td>11.3</td>
<td>1.2</td>
<td>1.1</td>
<td>12.5</td>
<td>12.4</td>
<td>9.5</td>
<td>8.9</td>
</tr>
<tr>
<td>Latvia</td>
<td>11.0</td>
<td>0.4</td>
<td>0.2</td>
<td>11.4</td>
<td>11.2</td>
<td>3.9</td>
<td>1.8</td>
</tr>
<tr>
<td>Kyrgyzstan</td>
<td>7.5</td>
<td>0.9</td>
<td>1.0</td>
<td>8.4</td>
<td>8.5</td>
<td>10.6</td>
<td>11.8</td>
</tr>
<tr>
<td>Tajikistan</td>
<td>6.7</td>
<td>0.9</td>
<td>0.8</td>
<td>7.6</td>
<td>7.5</td>
<td>11.7</td>
<td>10.7</td>
</tr>
<tr>
<td>Armenia</td>
<td>9.6</td>
<td>0.6</td>
<td>1.0</td>
<td>10.2</td>
<td>10.6</td>
<td>5.8</td>
<td>9.4</td>
</tr>
<tr>
<td>Turkmenistan</td>
<td>7.2</td>
<td>0.4</td>
<td>0.9</td>
<td>7.6</td>
<td>8.1</td>
<td>5.8</td>
<td>11.1</td>
</tr>
<tr>
<td>Estonia</td>
<td>6.5</td>
<td>0.3</td>
<td>0.1</td>
<td>6.8</td>
<td>6.6</td>
<td>4.4</td>
<td>1.5</td>
</tr>
</tbody>
</table>

\textit{Note.}

\textsuperscript{a} Two separate data sets on budgets of workers and employees (\textit{rabochie and sluzashie}) and those of collective farmers (\textit{kolkhozniki}) in each republic were merged into all population series for the republic by using the proportion of each group in the population as weights and by multiplying the merged figures by the population in the republic.

\textsuperscript{b} GNP in each republic in 1989 was estimated using GDP estimates provided by the World Bank (1993) and the ratio between GDP and GNP in the Soviet Union.

\textsuperscript{c} As in table 2, value added by informal economy activities was obtained by subtracting the sum of input cost, food re-trading, private transfer, and income from the sale of food and animals from the sum of the value of self-consumption, income from the sale of food and animals, other income from people, and informal income from the state.

\textsuperscript{d} As in table 3, value added by informal economy activities was obtained by subtracting the sum of input cost, food re-trading, private transfer, and expenditure paid to people in order to purchase food and animals from the sum of the value of self-consumption, expenditure paid to people in order to purchase food and animals, and other expenditure to people.