

How Reliable Are Soviet Statistics on the Kolkhoz Markets?¹

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Abstract: State retail trade in food products in the USSR is supplemented by non-State sales on the variable-price 'kolkhoz markets.' Both Soviet policy statements and retrospective emigre interview surveys suggest that the population obtains a substantial proportion of its food supply from the kolkhoz markets, far in excess of the proportions given in officially published Soviet statistics. The understatement

of kolkhoz market sales in these statistics is explained by an analysis of the methodology of their derivation from the continuous Soviet survey of quantities and prices of sale on the kolkhoz markets.

Key words: Soviet; survey; trade; kolkhoz-markets; food.

0. Terminological Note

The USSR consists of fifteen Union Republics. Each Republic is divided into provinces (*oblasti*) and territories (*krai*), which are in turn divided into counties (*raiony*) and towns with the status of county-level administrative units. Small towns form part of *raiony*. The main agricultural enterprises are collective farms (*kolkhozy*) and State farms (*sovkhozy*), but collective farmers (*kolkhozniki*) and other citizens are allowed to cultivate personal (or private) plots.

1. Introduction

Food products are sold to Soviet consumers through two separate channels: that of 'State and cooperative trade' – i.e. the fixed-price

retail outlets subordinate to the Republican Ministries of Trade and to the 'consumer-cooperative unions' – and that of 'kolkhoz trade', which refers to trade on open urban and rural markets where prices fluctuate in accordance with demand and supply, subject only to some restrictions on maximum prices. On the kolkhoz markets, *kolkhozniki*, workers at *sovkhozy* and other citizens with personal plots sell, directly or through agents, produce from these plots to the public. *Kolkhozy* themselves also sell produce surplus to State procurements and other requirements on the kolkhoz markets through their representatives, as do *sovkhozy* and the subsidiary farms and gardens attached to some non-agricultural enterprises. Finally, private sales of food products made outside the kolkhoz markets, for example by pre-arranged delivery or right at the plots, are included under the category of kolkhoz trade.

Certain policy measures have recently been taken in the USSR aimed at the encouragement of kolkhoz trade. Speaking on agriculture

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at the 27th Congress of the Communist Party in March 1986, the Chairman of the newly formed State Agro-Industrial Committee Vsevolod Murakhovskii said: 'The socialist market must play an important role in increasing the volume and raising the quality of produce. There is nothing to fear in this.' Kolkhozy have accordingly been guaranteed free disposal of all produce surplus to State procurements, more of which may henceforth find its way on to the kolkhoz markets.³ Steps have also been announced to increase the number of personal plots available for leasing to industrial workers and employees.⁴

One finds in the Soviet press other indications that Party leaders may be looking to kolkhoz trade as perhaps the key source of an improved food supply to the population. A recently published interview with the First Secretary of the Omsk (Siberia) oblast Party Committee S.I. Manyakhin may be cited in this connection. The interviewer praises the urban market at Omsk, on which he 'saw several rows of meat stalls.' Manyakhin explains that 'raising up the personal plots' has been a way of 'radically changing the food-products situation': 'Now every second kilogramme of meat and every third litre of milk is obtained by the population of the oblast thanks to the personal plots and the auxiliary farms of enterprises.'⁵ Moreover, the number of 'officially organized' kolkhoz markets in the USSR is reported to have risen from 5 900 in 1981 to 6 100 in 1985,⁶ not counting numerous unofficial markets.

This stress on the importance of kolkhoz trade for food supply does not seem very consistent with the quite modest figures for the volume of kolkhoz trade published in the statistical handbooks of the Central Statistical Administration (TsSU),⁷ or in the Soviet academic monographs which draw their data from the TsSU handbooks.⁸ According to these sources, sales of food products on urban kolkhoz markets, valued at prices of sale, constitute about 5 % of total sales of food products to the population. Even if only 'a comparable set of food products,' available in similar form both in State and cooperative and in kolkhoz trade, is considered, the proportion rises to no more than about 10 % (see Table 1).

The reliability of these TsSU series has long been a matter of uncertainty. Jerzy Karcz, in his analysis of the kolkhoz market, noted the paucity of information on the method by which the series are derived, and therefore left the question of reliability open.⁹ More recently, two independent retrospective interview surveys of Soviet emigres, each covering about 1 000 families, have suggested that the true volume of kolkhoz-market food sales to the urban population exceeds the figure published by TsSU by a huge margin. According to the findings of Ofer and Vinokur in Israel, the true volume exceeds the published volume

An 'officially organized' market is one opened on the basis of a decree of a gor(rai)ispolkom or village Soviet. The number of trading places at these markets rose from 1 463 000 in 1981 to 1 495 000 in 1985.

⁷ For a run of years, see *Narodnoe Khozyaistvo SSSR 1922-1982 - yubileinyi statisticheskii yezhegodnik*, (1982), Moscow, pp. 466-467. Some data on kolkhoz trade can be found not only in the NKh SSSR volumes, but also in many Republican statistical handbooks.

⁸ E.g.: Grigorovskii, V. Ye. and Alekseev, M. A. (1968): *Lichnoe podsobnoe khozyaistvo kolkhoznikov, rabochikh i sluzhashchikh v SSSR*. Leningrad.

Belyanov, V. A. (1970): *Lichnoe podsobnoe khozyaistvo pri sotsializme*. Moscow. Shmelev, G. I. (1971): *Lichnoe podsobnoe khozyaistvo i yego svyazi s obshchestvennym proizvodstvom*. Moscow.

⁹ Karcz, J. (1964): A quantitative analysis of the collective-farm market. *American Economic Review*, Vol. 54, No. 4, pp. 315-334.

³ Summary of World Broadcasts, SU/8198/C/19, 4 March 1986.

⁴ Medvedev, Zh. (1986): Gorbachev, Basil Blackwell, Oxford, pp. 199-201.

⁵ *Kommunist* 1985, No. 8, p. 31.

⁶ "Gvoz'd' dlya vsei raboty...", *Literaturnaya gazeta*, 29 January 1986, p. 10.

⁷ Bugakova, S. (1985): *Yedinovremennyy uchet material'no-tekhnicheskoi bazy kolkhoznykh rynkov*, *Vestnik statistiki* No. 10, p. 40.

Table 1. *Share of Kolkhoz Trade in Total Sales of Food Products to the Population According to Published Soviet Statistics*

Year	All food products		A comparable set of food products	
	At sale prices	At State retail prices	At sale prices	At State retail prices
	%	%	%	%
1965	5.3	3.8	10.0	7.3
1970	4.4	2.8	8.5	5.5
1975	4.2	2.3	8.1	4.6
1980	4.9	2.3	10.0	4.7
1981	5.4	2.4	11.0	5.1
1982	5.3	2.3	10.8	4.9
1983	4.9	2.2	10.0	4.6

Sources: NKh SSSR 1922–1982 (1982) Moscow, pp. 466–467;
 NKh SSSR v 1983 g. (1984) Moscow, pp. 457–458.

by a factor of about 1.5–2.0¹⁰, while according to the findings of Trembl in the USA, the factor is almost 6.0¹¹ (both surveys related to the late 1970s).

In view of the difficulties inherent in retrospective interview surveys, investigators may still be reluctant to abandon use of the officially published data. In this article we re-examine the statistical methodology underlying the TsSU series in order to assess the degree of their unreliability and the feasibility of correcting for the biases contained in them.¹²

The source of the published data is the continuous survey of kolkhoz markets (KMS) conducted by TsSU with the assistance of the market managements. We start with a general description of this survey and an analysis of

the categories of kolkhoz trade covered and not covered by it (Section 2). Next we consider the reliability of the primary quantity and price data collected in the KMS (Section 3), and the method of selection of the set of towns in which data are collected (Section 4). We are then in a position to assess the published data on the volume of sales and to discuss the question of their correction (Section 5).

2. The Kolkhoz-Market Survey and Its Coverage¹³

We must distinguish among the following surveys of kolkhoz markets conducted in the USSR:

¹³ For information on the kolkhoz-market surveys see:

Belyaevskii, I. K. (1959): *Nekotorye voprosy ucheta kolkhoznoi trgovli*, Vestnik statistiki No. 11, p. 33;
 Belyaevskii, I. K. (1962): *Statistika kolkhoznoi trgovli*, Moscow;
 Pletneva, A. S. (1966): 'Vyborochnoe obsledovanie prodazhi i tsen sel'skokhozyaistvennykh produktov na kolkhoznykh rynkakh', p. 295 in *Vyborochnoe nablyudenie v statistike SSSR*. Moscow; *Posobie po statistike dlya raionnykh (gorodskikh) informatsionnovychislitel'nykh stantsii (tsentrov) i inspektor gosudarstvennoi statistiki* (1980), Moscow, pp. 295–297; and
Spravochnik rabotnika kolkhoznogo rynka (1980) Moscow, pp. 177–182.

¹⁰ Ofer, G. and Vinokur, A. (1980, August): Private sources of income of the Soviet urban household. RAND Report R-2359-NA.

¹¹ Trembl, V. G. (1985, September): Purchases of food from private sources in Soviet urban areas. Berkeley-Duke Occasional Papers on the Second Economy in the USSR, Paper No. 3.

¹² An earlier stage in this research is reflected in Shenfield, S. (1984, November): How reliable are published Soviet data on the kolkhoz markets? CREES Discussion Papers G1. This paper contains historical, organisational and statistical detail which is omitted here. The present article supersedes it on points where the two conflict.

(a) The continuous survey of the quantities of 80 products sold on the 'basic' markets of 264 towns, conducted on behalf of TsSU by the market managements under the Ministries of Trade;

(b) The monthly survey of prices of sale of 80 products sold on the 'basic' markets of 350 towns (including the towns covered by (a)), conducted by the local offices of TsSU (raion and town Inspectorates of State Statistics);

(c) The monthly survey of prices of sale of 15–20 products sold on the markets of all 3 081 raion centres, conducted by the local offices of TsSU;

(d) The occasional complete survey of the quantities and prices of sale of 26 products sold on all official urban markets, conducted by TsSU at infrequent intervals;

(e) Various auxiliary surveys conducted by TsSU of aspects of kolkhoz trade not covered by the main surveys (e.g., sales by consumer cooperation, the geographical origin of deliveries, the material-technical base of the markets); and

(f) Continuous local surveys of markets conducted by the Ministries of Trade for the information of local (oblast etc.) leading bodies, covering a much larger number of towns than (a) and (b).

By the 'kolkhoz-market survey' we shall mean the survey of quantities in 264 towns and the survey of prices in the same towns – i.e. (a) and the corresponding part of (b) – as these alone form the data base for the compilation of the regular published statistics of kolkhoz trade. The other surveys, especially the occasional complete survey (d), do however provide data which Soviet investigators may use in assessing the reliability of the regular statistics.

The survey of quantities sold (a) is conducted on the 'basic' markets (almost certainly corresponding to the officially organized markets) of most Republican, oblast and krai centres and some other towns, primarily large

towns.¹⁴ At each market covered, compilation of the required records and their submission to the local TsSU office are in theory the sole duty of a record-keeper (*uchetchik-statistik*) on the staff of the market management.¹⁵ The record-keeper compiles daily records, for individual sellers and for kolkhozy separately, of the quantity of each of 80 products sold on the territory of the market. Quantities sold on behalf of kolkhozy from shops (or stalls) located outside the territory of the market are reported directly to TsSU each month by the shop managers.

The record-keeper collects data on quantities delivered to the market in the course of the day by 'continuously walking through the territory of the market', making his first tour as soon as the market opens, in order to question newly arrived sellers, checking their answers by 'direct observation' and 'expert assessment' of their products. The last tour is made just before the market closes for the day to estimate quantities remaining unsold, which are subtracted from the cumulated deliveries to give net quantities sold. As a supplementary source of data, the record-keeper may also use documents available for some categories of delivered products – products brought for sale by representatives of kolkhozy, products which have been weighed or processed by market employees (e.g., chopping-up of meat), and meat and milk which have been examined at sanitary-control stations (where these exist). However, in most cases he must rely on questioning and observation.

Data on quantities sold in the preceding month are submitted to the local TsSU office on the 25th of each month. Totals (*svodki*) for each town are passed, together with price data, up the TsSU hierarchy to the oblast (or

¹⁴ 'Towns' should be understood to include settlements of urban type.

¹⁵ The management is supposed to make additional staff available to help the record-keeper during fairs, holiday bazaars and 'other unusual events'.

krai) office, where price and quantity indices are calculated for each town and for all towns covered in the oblast (etc). Indices and turnover figures for economic regions and Republics are calculated by the Republican TsSU offices, and for the USSR as a whole by TsSU USSR.

The local TsSU office collects price data (b) also on the 25th of the month (or on the last trading day before the 25th if the 25th is not a trading day). One of its employees tours the kolkhoz market at the time of the most lively trading and records the prices at which selling is actually taking place, as distinct from the list prices. These 'modal' prices are assumed to approximate to average prices of sale. If a given product is being sold at two or more prices corresponding to different quality grades, the price recorded is that of the best grade on sale.

Complete surveys of urban kolkhoz markets (d) were conducted by TsSU in the week 10–16 April 1957, and again in March 1966; we are not aware of any conducted more recently. Data are available only for the 1957 survey, on which Belyaevskii bases his assessment of the KMS.¹³ In this survey, quantity and price data were collected for 26 'basic' products (accounting for about 70 % of turnover) at 5 697 urban markets.¹⁶

In analysing the extent of coverage of kolkhoz trade by the KMS, we must consider (i) the locations of trade covered and not covered by the survey; and, for the locations which are covered, (ii) the types of seller covered and not covered and (iii) the products the sale of which is and is not recorded.

(i) The KMS is restricted to officially organized or 'basic' kolkhoz markets, and also periodically held fairs (yarmarki) and holiday bazaars, in a set of predominantly large towns. According to Pletneva, 'basic' markets account for 'at least 75–80 %' of the

kolkhoz-market turnover of a town. Small unofficial markets commonly operate at railway stations, by river piers and elsewhere. At least in some towns, much private trade is carried on outside markets; visitors to Tashkent, for example, report trading 'down every alleyway.'

Apart from minimal coverage of small towns, the KMS does not aim to cover kolkhoz trade in rural areas ('intra-rural trade'). This excludes the approximately one-third of kolkhoz markets in the USSR which are located in rural areas.¹⁷ It also excludes sales made at the plots where the food is produced, and such private arrangements as the delivery of milk to urban households by kolkhozniki with cows living on the outskirts of towns.¹⁸

(ii) There are three broad types of seller on officially organized kolkhoz markets: individuals selling the produce of their personal plots; institutions selling their produce – kolkhozy and sovkhozy, as well as the subsidiary farms and gardens attached to some primarily non-agricultural enterprises; and agencies selling produce on commission on behalf either of individuals or of institutions. The function of agent is fulfilled either by consumer cooperation or by the 'bureaux of trading services' that market managements began to set up in the 1970s.¹⁹

The KMS covers sales by individuals, by kolkhozy and by bureaux of trading services, but it is unclear whether sales by institutions other than kolkhozy and by consumer cooperation are recorded. About one-quarter of trade turnover was handled by consumer cooperation in the mid-1960s²⁰; the propor-

¹⁷ The number of markets covered by the complete survey of urban markets in 1957 (5 697) is about two-thirds of the total number of markets, urban and rural, in the USSR as given by Belyaevskii (1962), op. cit. (8 500).

¹⁸ This example is discussed by Shmelev, op. cit. (note 8), p. 82.

¹⁹ Spravochnik ..., op. cit. (note 13), p. 180.

²⁰ Nazarov, R. S. (1966): *Kolkhoznaya trgovlya na sovremennom etape*. Moscow, p. 45.

¹⁶ Vestnik statistiki, 1958, No. 3, p. 90.

tion is probably rather lower now, following the development of bureaux of trading services.

(iii) The product nomenclature used in the KMS is quite extensive: 76 products were distinguished in the mid-1960s, and 80 by the end of the 1970s. The rare or exotic products which are not covered do not account for a significant proportion of sales.

3. The Reliability of Primary KMS Data

The collection of even moderately reliable data on the quantities and prices of sale of the wide variety of food products sold on a large and busy kolkhoz market is an extremely taxing task. Let us consider the problems faced by the surveys of quantities and of prices in turn.

Record-keepers may estimate quantities delivered to market during the day and remaining unsold at the end of the day by direct observation or by questioning sellers (or by a combination of the two). Each method entails its own difficulties.

Direct observation puts great demands on the skill and conscientiousness of the record-keeper. Even if he continually tours the market throughout the trading day, it is inevitable that a certain amount of produce will be sold before its presence can be recorded, or after it has been counted as an unsold remainder. Moreover, Belyaevskii complains that many record-keepers lack the necessary skills, arrive long after the market has opened, tour the market irregularly and leave before the market closes without recording unsold remainders.

Although the record-keeper is recruited 'with the agreement' of the local TsSU office and works in accordance with TsSU instructions, he is subordinate to the kolkhoz-market management²¹, for whom the provision of

data for the KMS is a matter of secondary concern. The management often, in contravention of instructions, diverts the record-keeper to other tasks, with record-keeping either being neglected or being entrusted to unqualified staff—cashiers, typists, secretaries or even cleaners. In contravention of the instruction that one record-keeper must be allotted to each market covered, a single person may be required to keep records for several markets in a town.

Individual sellers, questioned about their produce, may deliberately understate quantities brought to market. A seller may do this even if she understands that data are being collected only for statistical purposes, out of ingrained wariness of officialdom:

For purely psychological reasons the seller is often inclined to understate quantities, although he can gain no material advantage from this. For example, a kolkhoznik has brought two sacks of potatoes, but when questioned ... points to only one.²²

Sellers often give information in non-metric forms, either in traditional units like poods, which the record-keeper has to translate into metric units using a table of coefficients, or in sacks, bunches of vegetables etc. Not all record-keepers are able to derive reliable metric data.

Data obtained by direct observation may contain substantial error, but as some errors compensate for others (e.g., under-recording of deliveries compensates for under-recording of unsold remainders) the direction of the net bias is unclear. The net bias of data obtained by questioning is probably downwards, but record-keepers may often correct for such bias by means of 'expert assessment'. Belyaevskii gives some examples of errors discovered in a check of data submitted for one town: the

²¹ The market management is jointly subordinate to the Republican Ministry of Trade and the Trade Administration of the oblast government (oblispolkom) (Nazarov, op. cit., p. 71).

²² Belyaevskii (1962), op. cit. (note 13), pp. 17–18.

quantities sold of some products were greatly understated, the quantities sold of others greatly overstated.²³ Biases in quantity data are therefore unpredictably variable and can be significant in either direction.

Some of the problems pertaining to the survey of quantities clearly do not affect the survey of prices. In particular, the collection of price data directly by employees of TsSU makes for greater reliability. However, here again there are factors which tend to bias data in one direction or the other.

First, one might argue that prices observed at the time of day when trade is most lively and demand heaviest must tend to exceed average daily prices of sale. Sellers may be expected to cut prices, especially of perishable produce, towards the end of the day in order to sell off their remaining stock. Second, average prices of products being sold in two or more quality grades will be overstated by the practice of recording only the price of the best grade on sale.

On the other hand, Trembl has pointed out that the desire of sellers and of record-keepers (responsible to market management) to conceal frequent violations of maximum-price regulations leads to under-recording of prices of sale. Arguably, this effect far outweighs any upwards biases. A comparison of average ratios of kolkhoz-market to State retail prices for twelve key food products derived from a Radio Liberty interview survey of Soviet emigres arriving in Western Europe in 1981–83 with corresponding ratios derived from published Soviet statistics shows that the former ratios exceed the latter on average by over 40 %.²⁴ As there are serious problems

with this comparison, including the very approximate reliability of retrospective interview data, it does not enable us to estimate biases in KMS price data, but the existence of a significant net downwards bias does seem likely.

Given that net biases in quantity data may be in either direction, primary KMS data on kolkhoz-trade turnover in money terms may be somewhat understated.

4. Selection of the Towns Covered by the KMS

The KMS is cited in Soviet statistics textbooks as an example of the application of the 'method of the basic mass' (MBM). The MBM is used in the study of phenomena which are distributed among units of observation in such a way that a 'predominant' portion of the phenomenon, its 'basic mass', is accounted for by relatively few units, while the remainder is dispersed among a much larger number of units. All units above a certain size are included in the survey and all units below the cut-off point excluded.

The MBM has certain practical and organizational advantages over probability sampling, and is used under the name of concentrated sampling in other countries as well as in the USSR. However, it yields no information about the neglected portion of the phenomenon, unless (as is only rarely the case) it can be assumed that the units observed are sufficiently representative in relevant respects of the units not observed. This does not greatly matter if the total weight of the omitted units is insignificant, or if only units above the cut-off point are central objects of interest. Otherwise, concentrated sampling suffers from the deficiency that the results obtained cannot be extrapolated to the population as a whole.

The survey of quantities sold at present covers kolkhoz markets in 264 towns; in the 1950s and early 1960s, 251 towns were

²³ Belyaevskii, *op. cit.*, p. 30.

²⁴ Trembl, *op. cit.* (note 11), pp. 22–23; Radio Liberty, Soviet Area Audience and Opinion Research, Food Supply in the USSR, AR No 2–82, April 1982; 10–82, November 1982; 3–83, August 1983; 2–84, March 1984; 7–84, November 1984.

Table 2. Degree of Coverage by KMS of Numbers of Towns, Urban Population and Urban Kolkhoz-Market Turnover for Different Ranges of Town Population Size in 1957*

Ranges of town population size	Degree of coverage of numbers of towns	urban population	urban kolkhoz-market turnover
	%	%	%
Less than 10 000	0.2	0.3	0.5
10 000– 20 000	2.5	2.8	4.4
20 000– 50 000	13.8	16.0	15.3
50 000– 100 000	43.4	45.2	56.9
100 000– 500 000	83.0	86.1	88.3
More than 500 000	100.0	100.0	100.0
All towns	9.5	58.1	61.2

* Complete survey of urban kolkhoz markets of April 1957 as basis of comparison. 198 small towns, for which population data were lacking, were excluded from the comparison.

Source: Belyaevskii (1962), p. 37.

covered.²⁵ Belyaevskii shows that in 1957 all towns with populations of half-a-million or more and most towns with populations of 100 000 or more were covered, but very few towns with populations below 20 000. The towns covered accounted for about 58 % of the Soviet urban population and about 61 % of urban kolkhoz-market turnover (Table 2). More recent sources state that the towns covered account for 50–55 % of urban population and about 60 % of turnover.²⁶

The correspondence between the KMS and the method of the basic mass is nevertheless rather a loose one, as some towns omitted are larger than some towns covered. In particular, it appears that statements in Soviet textbooks to the effect that all oblast and krai centres, as well as all capitals of Union and Autonomous

Republics, are included in the survey²⁷ are not completely accurate. For example, according to Andreev and Semenova, the survey in Kazakhstan in 1978 covered only the capital, Alma-Ata, and 13 out of 18 oblast centres.²⁸

Data published from the complete survey of urban kolkhoz markets in 1957 show that the degree of coverage of kolkhoz-market turnover by the KMS varies not only by size of town, but also by type of product and by region (Table 3). Thus, only 35 % of kolkhoz trade in grain is covered, as against about 60 % of the trade in potatoes, meat and milk, largely reflecting the differing commodity structures of kolkhoz trade in large and in small towns.²⁹

A striking feature of the regional variation is the relatively low degree of coverage in

²⁵ See, for example:

Teoriya statistiki (1956) Moscow, p. 79;

Uchebnoe posobie po otchel'nym otraslyam statistiki (1958) Moscow, p. 246;

Kharlamov, A. I., Ionsen, I. A., and Laryushkina, G. A., *Statistika sovetskoi trgovli* (1977) Moscow, p. 14; and

Obshchaya teoriya statistiki (1977) Moscow, p. 293.

²⁶ E.g., Kharlamov et al., op. cit. (note 25).

²⁷ E.g., Belyaevskii, I. K., Ryauzov N. N. and Ryauzov, D. N. (1983): *Statistika trgovli* Moscow, p. 116.

²⁸ Andreev, A. K. and Semenova, V. M. (1979): 'Polnee uchityvat' prodazhu sel'skokhozyaistvennykh produktov na kolkhoznnykh rynkakh', *Finansy SSSR* No. 2, pp. 57–59.

²⁹ For a comparison of the commodity structures of kolkhoz trade in large and in small towns, see Table 1 in *Vestnik statistiki* 1958, No. 3, p. 90, reproduced in Shenfield, op. cit. (note 12), p. 41.

Table 3. Degree of Coverage by KMS of Urban Kolkhoz-Market Turnover in Various Types of Product in Various Regions in 1957*

Region	Types of product				
	Grain	Potatoes	Meat	Milk	Animal fats
	%	%	%	%	%
Belorussia	8	30	46	62	16
North-Western RSFSR**	11	82	57	70	18
West Siberia	65	79	63	73	52
Armenia	64	74	89	75	73
USSR as a whole	35	61	60	59	44

* Complete survey of urban kolkhoz markets of April 1957 as basis of comparison.

** Russian Soviet Federated Socialist Republic (Russian Republic).

Source: *Vestnik statistiki* 1958, No. 3, p. 91, Table 2 (extract). The data are here presented as 'the share of large towns in the total volume of sales'.

Belorussia. The KMS covers the twelve largest towns in this Republic, which accounted for about 56 % of the urban population in 1959. However, it is estimated that only 32 % of kolkhoz-market turnover was covered in 1962 (36 % in 1955, 28 % in 1958), per-capita turnover being much higher in smaller than in larger towns.³⁰ Survey data are in general highly sensitive to geographical bias because kolkhoz trade is subject to extreme geographical variation.³¹

5. The Reliability of Published Soviet Data on Kolkhoz Trade

Soviet authors recognize that, the KMS being based on the MBM, its data 'do not cover the whole volume of turnover and, as experience has shown, cannot with a sufficient degree of representativeness be extrapolated to the whole of kolkhoz trade'.³² They therefore

recommend that other data sources, in particular the balances of agricultural products and the Family Budget Survey (FBS), be used to supplement the KMS when assessing kolkhoz trade.³³ Thus, data provided by kolkhoznik respondents to the FBS include data on income derived from selling the produce of personal plots on the kolkhoz market, while data provided by worker and employee respondents include data on expenditures by source of purchase (State and cooperative or kolkhoz trade).

Soviet statistical and planning agencies do not then rely exclusively on the KMS for their internal estimates of kolkhoz trade, but use other sources to correct KMS data. This no doubt considerably improves the estimates, although the improvement is constrained by the limitations of the supplementary data sources, which are few in number, tend to reflect kolkhoz trade only indirectly and are themselves not necessarily very reliable. The quality of data from the FBS, the most

³⁰ Real 'nye dokhody i zhiznennyi uroven' trudyashchikhsya (Minsk, 1966), p. 193.

³¹ Belyaevskii (1962), op. cit. (note 13), pp. 51–52.

³² Belyaevskii et al., op. cit. (note 27), p. 119.

For similar statements, see

Shnirlin, Yu. (1958) *Sovetskaya trgovlya* No. 2, pp. 31–33;

Gromyko, G. L. and Trudova, M. G., (1963): *Kratkii kurs statistiki*. Moscow, p. 219; and

Dolnikov, A. Ya. and Ozeran, L. G. (1969): *Statistika*. Moscow, p. 263.

³³ Belyaevskii et al., op. cit.; Dolnikov and Ozeran, op. cit.;

Partigul, S. P. (1966): 'Vyborochnyi metod v statistike sovetsskoi trgovli', p. 281 in *Vyborochnoe nablyudenie v statistike SSSR*, Moscow.

important alternative data source, has been assessed by the present writer.³⁴

Too few data from the FBS and other supplementary sources are published to enable the non-Soviet investigator to imitate the process of correction of KMS data used in the USSR. It is still important to ascertain whether published Soviet statistics on kolkhoz trade are uncorrected KMS data or corrected estimates. Most of the statistical handbooks issued by TsSU which contain data on kolkhoz trade do not make this clear, but fortunately the more detailed presentation of data in the handbooks for the Republic of Estonia from 1969 onwards provide an exception. Thus, we are informed that at the end of 1979 there were 25 kolkhoz markets (presumably, officially organized ones) in Estonia, and that sales of agricultural products on urban kolkhoz markets in 1979 amounted to 7.0 million rubles.³⁵ We are also given sales figures for each of four towns:

Tallinn	3.1 million rubles
Narva	1.1 million rubles
Pärnu	0.6 million rubles
Tartu	2.2 million rubles,

which adds up to 7.0 million rubles. It is obvious that the survey covers only these towns, and that the data for the Republic as a whole are KMS data which have not been extrapolated or corrected in any way. It is very unlikely that the data are compiled according to different principles in other Republics.

Consistent with the view that the published statistics are not extrapolated is the finding of Ofer and Vinokur that the published figures for the city of Moscow, which do not require extrapolation, were much closer to the results obtained from their emigre interview survey

than were the published figures for the USSR as a whole.³⁶

To assess the bias in published statistics for the turnover of kolkhoz trade, we must take the following factors into account:

- (a) the deficiencies of the primary quantity and price data collected at the kolkhoz markets covered by the survey;
- (b) the non-coverage of kolkhoz trade occurring outside the 'basic' kolkhoz markets in the towns covered by the survey;
- (c) the non-coverage of some large towns and almost all small towns by the survey; and
- (d) the non-coverage of kolkhoz trade occurring in rural areas ('intra-rural trade') by the survey.

Ideally we would wish to assign corrective coefficients to each of these factors. Pletneva defines 'basic' markets as those accounting for 75–80 % of the total kolkhoz-trade turnover of a town.³⁷ From Table 2 we know that the towns covered by the KMS in 1957 accounted for about 61 % of the total urban kolkhoz-market turnover of the USSR. Thus we might suggest corrective coefficients, though very approximate and outdated ones, of 1.3 and 1.6 for (b) and (c) respectively, or a coefficient of about 2 for (b) and (c) combined. However, we are not able to suggest coefficients for either (a) or (d). Our discussion of the quality of primary KMS data in Section 3 leads us to conclude, especially in view of understatement of quantities by sellers to record-keepers and likely concealment of the violation of maximum-price regulations, that a coefficient to compensate for (a) would have to be significantly greater than 1. There is no doubt that substantial allowance needs to be made also for rural trade (d).

While it is not possible to make a quantitative estimate of the extent to which published Soviet statistics understate the true volume of

³⁴ Shenfield, S. D. (1983, October): 'A note on data quality in the Soviet Family Budget Survey', *Soviet Studies*, Vol. XXXV, No. 4, pp. 561–568.

³⁵ *Narodnoe Khozyaistvo Estonskoi SSR v 1979 g.* (Tallinn, 1980), p. 259.

³⁶ Ofer and Vinokur, *op. cit.* (note 10).

³⁷ Pletneva, *op. cit.* (note 13).

kolkhoz trade, study of the methodology of the KMS does confirm that the order of magnitude of the bias indicated by the emigre interview surveys is plausible.

6. Concluding Remarks

Analysis of the Soviet literature on the statistics of kolkhoz trade supports the broad conclusions of other investigators who have suggested, on the basis of other evidence, that published Soviet statistics understate by a very wide margin the true scale of kolkhoz trade in the USSR and its relative weight in the provision of food products to Soviet consumers. Unfortunately it seems that we lack the necessary data to replace the published statistics with more reliable revised estimates.

To what extent may the reliability of published Soviet statistics be improved in the future? Soviet specialists have advocated a variety of changes in the methodology of the kolkhoz-market survey that might enhance its accuracy. For example, Belyaevskii argues

that the quality of primary data would be raised by bringing the collection of quantity and of price data together under the direct control of TsSU. Andreev and Semenova urge that the set of towns covered by the continuous survey be expanded, and that the towns omitted by the continuous survey be the subject of an additional periodic survey.³⁸ Even a modest (say 5 %) sample survey of kolkhoz markets in small towns could make KMS data significantly more representative. However, it will surely remain impracticable to collect data on extra-market and rural trade. The objective obstacles to obtaining really reliable statistics on kolkhoz trade as a whole may be insuperable.

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³⁸ Belyaevskii (1959), *op. cit.* (note 13),
Andreev and Semenova, *op. cit.* (note 28).