

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Small-Scale Industry in the Soviet Union

Volume Author/Editor: Adam Kaufman

Volume Publisher: NBER

Volume ISBN: 0-87014-394-8

Volume URL: <http://www.nber.org/books/kauf62-1>

Publication Date: 1962

Chapter Title: Small-Scale Industry On The Eve Of The Revolution

Chapter Author: Adam Kaufman

Chapter URL: <http://www.nber.org/chapters/c5672>

Chapter pages in book: (p. 18 - 28)

CHAPTER 3

Small-Scale Industry on the Eve of the Revolution

As already pointed out, prerevolutionary statistics on small-scale industry are poor, being limited to private studies covering only selected industries or areas. This chapter presents our estimates of employment and value of output in small- and large-scale industry as based on the findings of the special committee of the Central Statistical Administration whose study of prerevolutionary industry, made during the 1920's, was referred to in the first section of the preceding chapter. Like the estimates of the special committee, ours apply to 1913 within the interwar territory of the Soviet Union; unlike the committee estimates, ours exclude repair shops, in accord with general practice in the West, but include logging and fishing, sectors incorporated within the bounds of industry during the Plan period, though not included there earlier. After presenting our estimates, we compare them with those of certain Soviet scholars.

Our Estimates

Industrial employment in 1913 amounted to about 5.8 million persons in full-time equivalents, almost equally divided between the large- and small-scale sectors (see Table 1).¹ The small-scale sector accounted for more than half of employment in the cases of wood and paper products, textiles, logging, and fishing.² Employment in small-scale industry

¹ Recent Soviet sources give the average annual number of workers and *kustari* for 1913 within the interwar Soviet territory as approximately 5.4 million (see, e.g., *Narodnoe khoziaistvo SSSR* [National Economy of the USSR], Moscow, 1956, p. 44). This figure probably includes repair shops and fishing and logging. Our estimate including repair shops would be 5.9 million full-time employed persons (see Table A-2).

² Fishing and logging have been put entirely within small-scale industry because of the peculiar character of their seasonal and rural employment. Soviet statistical

The Eve of the Revolution

TABLE 1

PERSONS ENGAGED IN LARGE- AND SMALL-SCALE INDUSTRY,^a
BY INDUSTRIAL GROUP, 1913

<i>Industrial Group</i>	<i>Thousand Full-Time Equivalents</i>			<i>Per Cent</i>	
	Large- Scale	Small- Scale	Total	Large- Scale	Small- Scale
Ferrous and nonferrous metals ^b	425	—	425	100	—
Fuel	314	1	315	100	—
Electric power stations	20	—	20	100	—
Chemicals ^c	56	14	70	80	20
Machine building and metal products ^d	391	211	602	65	35
Logging, wood and paper industry	176	897	1,073	16	84
Logging	—	413	413	—	100
Wood and paper industry	176	484	660	27	73
Construction materials	168	63	231	73	27
Printing	70	9	79	89	11
Textiles and allied products	773	1,074	1,847	42	58
Food and allied products	448	624	1,072	42	58
Food processing	448	347	795	56	44
Fishing	—	277	277	—	100
All others	23	60	83	28	72
Total	2,864	2,953	5,817	49	51

SOURCE: Table A-2.

^a On interwar Soviet territory, excluding repair shops.

^b Includes mining ores.

^c Includes rubber.

^d Excludes repair shops.

— negligible.

was distributed as follows among industrial groups: textiles and allied products, 36 per cent; wood and paper industry, 16 per cent; logging, 14 per cent; food processing, 12 per cent; fishing, 9 per cent; machinery and metal products, 7 per cent; and all others, 6 per cent.

The gross value of industrial output in 1913 was about 9.2 million rubles,³ a third being accounted for by small-scale industry (see Table

sources of the 1920's and early 1930's give the number of wage earners in logging and fishing under data for agricultural employment (see, for example, *SSSR v tsifrakh* [The USSR in Figures], Moscow, 1935, p. 162). Until 1932 they excluded seasonal workers in timber cutting who were hired with their own horses and carts. Our estimates (Table 1) cover such seasonal workers along with self-employed producers.

³ For 1926/27, 1927/28, and 1928/29, value added was about 41 per cent of value of output in all industry (G. Warren Nutter, *Growth of Industrial Production in the Soviet Union*, Princeton for National Bureau of Economic Research, 1962,

Small-Scale Industry in the Soviet Union

TABLE 2

GROSS VALUE OF OUTPUT OF LARGE- AND SMALL-SCALE INDUSTRY,^a
BY INDUSTRIAL GROUP, 1913

<i>Industrial Group</i>	<i>Million Rubles</i>			<i>Per Cent</i>	
	Large- Scale	Small- Scale	Total	Large- Scale	Small- Scale
Ferrous and nonferrous metals ^b	444	—	444	100	—
Fuel	647	—	648	100	—
Electric power stations	105	—	105	100	—
Chemicals ^c	270	9	279	97	3
Machine building and metal products ^d	646	129	775	83	17
Logging, wood and paper industry	260	994	1,254	21	79
Logging	—	842	842	—	100
Wood and paper industry	260	152	412	63	37
Construction materials	148	33	181	82	18
Printing	92	8	100	92	8
Textiles and allied products	1,574	864	2,438	65	35
Food and allied products	1,887	1,066	2,953	64	36
Food processing	1,887	932	2,819	67	33
Fishing	—	134	134	—	100
All others	29	38	67	43	57
Total	6,103	3,142	9,245	66	34

SOURCE: Table A-3.

^a On interwar Soviet territory, excluding repair shops.

^b Includes mining of ores.

^c Includes rubber.

^d Excludes repair shops.

— negligible.

2). The share of the small-scale sector exceeded a third in logging, the wood and paper industry, textiles and allied products, and fishing. The percentage breakdown for small-scale industry alone was as follows: food processing, 30 per cent; textiles and allied products, 27 per cent; logging, 27 per cent; the wood and paper industry, 5 per cent; fishing, 4 per cent; machinery and metal products, 4 per cent; and all others, 3 per cent.

Rybnikov's and Gukhman's Estimates

Professor A. A. Rybnikov conducted a life-long study of the *kustar'* industry. The data on small-scale employment and value of output

Table C-2). If the same fraction applied to 1913, value added for that year would be about 3.8 billion rubles.

The Eve of the Revolution

given in his two books⁴ are primarily based on the long series of semi-private investigations conducted mainly by local and provincial councils (*zemstva*) in forty provinces of European Russia, twenty-seven being studied from 1903 to 1913 and the other thirteen from 1883 to 1903. After compiling the data from these local studies—based on interviews with *kustari* in the villages where specific industries were concentrated—and after correcting some data that he considered obsolete or incomplete, Professor Rybnikov derived the figures given in Tables 3 and 4 below.⁵

TABLE 3
COMPARISON OF DIFFERENT ESTIMATES OF PERSONS ENGAGED IN LARGE-
AND SMALL-SCALE INDUSTRY,^a 1908, 1912, OR 1913

	Rybnikov ^b	Gukhman ^c	Grinevetskii ^d	NBER ^e
MILLION PERSONS				
Large-scale industry	2.7	2.6	2.8	2.9
Small-scale industry	5.2	5.1	1.3	3.5
Urban	1.2	1.3		
Rural	4.0	3.8		
MILLION FULL-TIME EQUIVALENTS				
Large-scale industry	2.7	2.6	2.8	2.9
Small-scale industry	2.9 ^f	2.9 ^f	g	2.3

^a Excluding repair shops, logging, and fishing.

^b For 1908 and 1910 (urban small-scale industry only) on Tsarist territory, excluding Finland. Taken from A. Finn-Enotaeveskii, *Kapitalizm v Rossii* [Capitalism in Russia], Moscow, 1925, vol. I, p. 132, as data reproduced from Rybnikov's book which is not available in the United States.

^c For 1913 on Soviet interwar territory. Gukhman in *Planovoe khoziaistvo*, 1924, No. 6, p. 87. The figures for small-scale industry are midpoints of a range.

^d For 1912 on Tsarist territory excluding Finland. V. I. Grinevetskii, *Poslevoennye perspektivy russkoi promyshlennosti* [Postwar Prospects of Russian Industry], 2nd ed., Moscow, 1922, p. 13. Excludes artisans engaged part-time in industrial activities (see text).

^e For 1913 on interwar Soviet territory. Tables A-1 and A-2.

^f Our figures. Average work year in small-scale industry taken as 27 weeks (see notes to Table A-2) and full-time work year as 48 weeks.

^g Cannot be estimated because of incomplete coverage of *kustar*' employment.

⁴ *Melkaia promyshlennost' i ee rol' v vosstanovlenii russkogo narodnogo khoziaistva* [Small-Scale Industry and Its Role in the Reconstruction of the Russian National Economy], Moscow, 1922, and *Melkaia promyshlennost' Rossii* [Small-Scale Industry in Russia], Moscow, 1923.

⁵ Data for urban artisans were derived from an investigation of urban settlements carried out in 1910 by the prewar Ministry of Trade and published in 1916 as *Remeslenniki i remeslennoe upravlenie* [Artisans and Handicraft Administration], Petrograd, 1916. This investigation was far from complete, covering, according to

Small-Scale Industry in the Soviet Union

TABLE 4

COMPARISON OF DIFFERENT ESTIMATES OF GROSS VALUE OF OUTPUT OF LARGE-
AND SMALL-SCALE INDUSTRY,^a 1908, 1912, OR 1913
(billion current rubles)

	Rybnikov ^b	Gukhman ^c	Grinevetskii ^d	NBER ^e
Large-scale industry	4.9	5.6	4.5	6.1
Small-scale industry	2.4	1.3	1.0	2.2
Urban	0.7	0.6		
Rural	1.7	0.7		

^a Excludes repair shops, logging, and fishing.

^b For 1908 on Tsarist territory excluding Finland. Finn-Enotaevskii, *Kapitalizm v Rossii*, I, p. 132.

^c For 1913 on interwar Soviet territory. Gukhman in *Planovoe khoziaistvo*, 1924, No. 6, p. 87.

^d For 1912 on Tsarist territory excluding Finland. Grinevetskii, *Poslevoennye perspektivy*, p. 13, and Petrov, *Promyshlennaia kooperatsiia*. Excludes *kustari* engaged only part-time in industrial activity (see text).

^e For 1913 on interwar Soviet territory. Table A-3.

Using the same material, another Soviet economist, B. Gukhman, estimated employment and gross value of output of the urban and rural small-scale industry for 1913, adjusting the data to the interwar Soviet territory.⁶ When the differences—working in opposite directions—in time and territorial coverage are taken into account, Gukhman's estimates of employment seem to agree with those of Rybnikov, but this is not the case for their value of output estimates. According to Rybnikov's estimates, small-scale industry accounted for a third of the total value of industrial output, while, according to Gukhman's estimates, it accounted for only a fifth. This discrepancy is explained by the different statistical treatment of the small-scale milling industry followed by Rybnikov and Gukhman. Rybnikov, in inflating the data on the sample of *kustar'* industry covered by the partial investigations, counted the value of grain brought to the flour mills by private customers for processing as part of the value of output of flour mills,

B. Gukhman ("K ischisleniiu produktii melkoi promyshlennosti" [On Measuring the Output of Small-Scale Industry], *Planovoe khoziaistvo* [Planned Economy], 1924, No. 6, pp. 87 ff), only 71.5 per cent of the urban population within the interwar Soviet territory. However, it provided a basis for estimating the handicraft population and its value of output. G. P. Petrov (in *Promyshlennaia kooperatsiia i kustar'* [Industrial Cooperatives and the *Kustar'*], Petrograd, 1916) adjusted the data of the 1910 investigation, and both Rybnikov and Gukhman made use of them.

⁶ Gukhman in *Planovoe khoziaistvo*, 1924, No. 6.

The Eve of the Revolution

and carried out the inflation for all industry including flour mills. Gukhman, on the other hand, inflated the data excluding flour mills and added the value of grain processed to the inflated figure. Rybnikov's procedure seems to be sounder, since Gukhman's estimate is a mixture of value of output (for all industry except flour milling) and value added (for a considerable part of flour milling).

In addition to making such over-all calculations, Gukhman also estimated the share of the small-scale sector in the gross value of output of certain industries. He estimated this share as 22 per cent for metal processing, 52 per cent for wood processing, 72 per cent for shoes and processing of materials of animal origin, and 22 per cent for the textiles and garment industry.⁷

Grinevetskii's Estimates

Another set of estimates was calculated by Professor V. I. Grinevetskii.⁸ They suffer from a serious shortcoming, because they do not cover *kustari* who worked at home and whose industrial activity was secondary to their agricultural production.⁹ That is, Grinevetskii included as *kustari* only those rural artisans who were employed full-time in industry. Russian economists working in this field generally agree that Grinevetskii severely underestimated the importance of small-scale industry.¹⁰

⁷ *Promyshlennost' i narodnoe khoziaistvo* [Industry and the National Economy], Moscow, 1927, p. 95. A more detailed breakdown of this nature is given by A. Morgenshtern in "Melkaia promyshlennost' v 1921 godu" [Small-Scale Industry in 1921], *Narodnoe khoziaistvo* [National Economy], 1922, No. 4.

⁸ *Poslevoennye perspektivy*.

⁹ Finn-Enotaevskii (*Kapitalizm v Rossii*, I, pp. 114 ff) complains that Grinevetskii erroneously interpreted Petrov's data (*Promyshlennaia kooperatsiia*) as covering urban artisans and *kustari*, when in reality Petrov speaks only of the urban component. Whatever the importance of this mistake, the main difference between Rybnikov's and Grinevetskii's estimates lies no doubt in the definitions they use of *kustar'* and artisan production.

¹⁰ The data on the *kustar'* population in 1913 derived by Rybnikov and Gukhman were confirmed, by and large, by the agricultural census carried out in thirty-two European provinces, in some Ural regions, and in nine Siberian provinces in the summer of 1917. According to this census (which did not cover eight provinces and gathered only incomplete information in seven others), there were 3,078 thousand *kustar'* enterprises in 1917 employing 4,616 thousand *kustari*. These data seem to include the peasant domestic industry, not working for the market, as well as peasants migrating to seasonal occupations in cities (see *Trudy Tsentral'nogo Statisticheskogo Upravleniia* [Works of the Central Statistical Administration], vol. 7, pp. 1 and 208 ff).

Small-Scale Industry in the Soviet Union

Strumilin's Estimates

A different method of assessing the role of prerevolutionary small-scale industry was employed by S. G. Strumilin,¹¹ who made use of the tax reports of Russian industrial enterprises. In 1899 all taxable enterprises in Russia were divided into eight categories, the six largest being assessed on their volume of production. The last two categories covered enterprises employing from two to sixteen hired workers. Self-employed *kustari* and artisans, as well as small producers with one hired worker, were not included in the categories of taxable enterprises. To assess the number of uncovered enterprises, the following procedure was used. In the 1897 population census, for each enterprise with two to four hired workers, there were two enterprises with one hired worker and eighteen shops with self-employed artisans and *kustari*.¹² Using those ratios, Strumilin estimated the number of *kustar'* and artisan enterprises in 1913.

To assess the gross value of output in small-scale industry, Strumilin utilized the findings of Gukhman.¹³ The value of output per urban handicraftsman in 1900 was estimated at 560 rubles and per *kustar'* as 178 rubles for an estimated working year of 25.4 weeks. Using these data and assuming that the working season for *kustari*, for whom the *kustar'* industry was their main source of subsistence, was nine months out of a year and for others, for whom it was only an auxiliary activity, four months, Strumilin estimated the annual value of output per person for the former group as 267 rubles and for the latter group as 120 rubles. It should also be noted that Strumilin assumed that the small-scale enterprises with two or more workers located in urban settlements had a higher value of output per engaged person (560 rubles) than the shops with one worker or without hired labor concentrated in the countryside (267 or 120 rubles).

From the number of people engaged and the value of their output, Strumilin derived for 1913 the gross value of output of the small-scale industry as 1,950 million rubles (see Table 5).¹⁴ By adding the gross

¹¹ S. G. Strumilin, "Nash dovoennyi tovarooBOROT" [Our Prewar Commodity Turnover], *Planovoe khoziaistvo*, 1925, No. 1.

¹² *Ibid.*, p. 102.

¹³ *Planovoe khoziaistvo*, 1924, No. 6, pp. 90-93.

¹⁴ Gukhman, by using the same method and data, calculated the gross value of output for small-scale industry for 1900-12 (see "Dinamika promyshlennosti Rossii v sviazi s dinamikoi narodnogo khoziaistva" [The Dynamics of Russian Industry in Connection with the Dynamics of the National Economy] in *Promyshlennost' i narodnoe khoziaistvo*, p. 82). Gukhman's estimates are reproduced in Table 5.

It should be noted that the estimate of gross value of output for 1908 given by

The Eve of the Revolution

TABLE 5

GROSS VALUE OF OUTPUT OF LARGE- AND SMALL-SCALE INDUSTRY
ESTIMATED FROM TAX REPORTS, 1900-13 ^a
(million current rubles)

	Total Industry	Large-Scale Industry	Small-Scale Industry ^b			Small-Scale Industry as Percentage of Total Industry
			Total	With Hired Labor	Self-Employed	
1900	5,963	3,761	1,702	680	1,022	31
1901	5,332	3,906	1,416	619	807	27
1902	5,418	4,029	1,384	599	785	26
1903	5,408	4,162	1,246	569	677	23
1904	5,637	4,217	1,420	613	807	25
1905	5,527	4,230	1,297	596	701	24
1906	5,294	4,136	1,158	504	654	21
1907	5,836	4,621	1,215	555	660	21
1908	6,105	4,800	1,305	609	696	21
1909	6,338	4,982	1,355	628	727	21
1910	6,429	4,977	1,452	662	790	22
1911	6,931	5,451	1,480	679	801	21
1912	7,900	6,194	1,706	848	858	22
1913	8,832	6,882	1,950	958	992	22

SOURCE: 1900-12, Gukhman in *Promyshlennost' i narodnoe khoziaistvo*, p. 82; 1913, Strumilin in *Planovoe khoziaistvo*, 1925, No. 1.

^a On Tsarist territory excluding Finland. Excludes repair shops, logging, and fishing.

^b Industrial enterprises and *kustar'* and artisan shops employing fewer than eight workers with a prime mover or fewer than sixteen without one.

value of output of enterprises subject to taxation, Strumilin derived the gross value of output of the total, large-, and small-scale industry.

More recently, Strumilin has estimated the 1913 share of small-scale industry as 37 per cent of the gross value of output expressed in

Rybnikov (Table 4) is considerably larger than that derived by Gukhman. The reason is the inclusion by Rybnikov and the exclusion by Gukhman of the value of grain processed in flour mills. Rybnikov estimated the number of people engaged in small-scale industry in prerevolutionary Russia (including the Polish provinces) as 4 million and the gross value of output as 1,700 million rubles. This gives 425 rubles as the annual output per person engaged, whereas Gukhman gives (excluding flour milling) only 196 rubles (*ibid.*, pp. 69 ff). Gukhman reproached Rybnikov for committing a substantial error in deriving the output per person engaged in small-scale industry without excluding data on flour milling.

Gukhman's and Strumilin's estimates from tax reports given in Table 5 reveal a distinct, though gradual, decline in the share of small-scale industry from almost a third of the total value of output in 1900 to less than a quarter in 1913.

Small-Scale Industry in the Soviet Union

1926/27 rubles.¹⁵ The large discrepancy between this and his earlier estimate may be explained by the fact that the latter did not include logging, fishing, and hunting—which were included in small-scale industry in 1913—whereas the former, in accordance with the accepted Soviet concept of industry, includes those sectors.¹⁶ It is worth noting that in his earlier article¹⁷ Strumilin estimates the gross value of output of logging, fishing, and hunting in 1913 as 914 million rubles, or almost 7 per cent of the value of agricultural output. If this sum is added to his earlier estimates of the value of output of small-scale industry in 1913, the share of small-scale industry in the total industrial output becomes 29 per cent. The remaining discrepancy between the earlier and later estimates is in part explained by the fact that the prices of consumer goods increased much more than the prices of producer goods between 1913 and 1926/27, which, since most of the output of small-scale industry was consumer goods, made the share of small-scale industry in total industrial output larger in 1926/27 prices than in 1913 prices.

Differences in Estimates

It is difficult to compare these various estimates because the years, territorial coverage, and definitions of industry vary. In the primitive, predominantly peasant economy of prerevolutionary Russia, it was difficult to draw a line between industry proper and the semi-industrial activity of the rural population. If the definition of industry is standardized, our estimate of employment, based on the official data of the Central Statistical Administration, is smaller than Rybnikov's and Gukhman's for small-scale industry, but larger for large-scale industry (see Table 3). Our estimate of gross value of output, also based on official data, is also larger than both of theirs for large-scale industry, but smaller than Rybnikov's and larger than Gukhman's for small-scale industry (see Table 4). The nature of these discrepancies suggests that there are a number of hidden inconsistencies in the ways all these estimates are made, in addition to the differences in territorial coverage. Despite the differences in detail, there is a rough con-

¹⁵ Article by S. G. Strumilin in *Sovetskaia sotsialisticheskaia ekonomika, 1917-57* [The Soviet Socialist Economy, 1917-57], Moscow, 1957, p. 128.

¹⁶ The official Soviet index of industrial production implies that small-scale industry, on interwar Soviet territory and apparently including logging and fishing, accounted for 32 per cent of the gross value of industrial output for 1913 in "1926/27" prices (see Table 20).

¹⁷ *Planovoe khoziaistvo*, 1925, No. 1, p. 118.

The Eve of the Revolution

TABLE 6

COMPARISON OF DIFFERENT ESTIMATES OF PERCENTAGE SHARES
OF SMALL-SCALE INDUSTRY IN EMPLOYMENT AND GROSS
VALUE OF OUTPUT, PREREVOLUTIONARY YEAR

	<i>Percentage Share in</i>	
	Employment ^a	Gross Value of Output ^b
Industry excluding logging and fishing ^c		
Tsarist territory		
Rybnikov (1908)	52	33
Grinevetskii (1912)	33	18
Strumilin (1913)	n.a.	22
Interwar Soviet territory		
Gukhman (1913)	53	19
NBER (1913)	44	26
Industry including logging and fishing ^c		
Tsarist territory		
Strumilin (1913)	n.a.	37 ^d
Interwar Soviet territory		
Official Soviet production index (1913)	n.a.	32 ^d
NBER (1913)	51	34

SOURCE: Tables 1 through 5 and 19. For Strumilin's estimate including logging and fishing, *Sovetskaia sotsialisticheskaia ekonomika*, p. 128.

^a Persons engaged adjusted to full-time equivalents.

^b In current rubles except as noted.

^c Repair shops are also excluded from the estimates excluding logging and fishing, and from the NBER estimate including the latter. They were of little significance in this period (see Tables A-2 and A-3).

^d In "1926/27" rubles.

n.a. not applicable.

sistency among the derived estimates of the percentage share of small-scale industry in employment and gross value of output (see Table 6).

Unfortunately, this is about as far as one can go in reconciling inconsistencies. We prefer our estimates because they are based on data collected and processed over a number of years, while statistical work was still relatively free of political considerations.

Summary

What was the position of small-scale industry on the eve of the revolution? It had about half of the employment and a third of the value

Small-Scale Industry in the Soviet Union

of output of all industry. It was primarily engaged in producing consumer goods, with about three-fifths of its employment and value of output devoted to the textile and food industries. In that sector, it accounted for almost three-fifths of total employment and more than a third of total value of output of all industry. Finally, it was mainly rural: *kustari* and other small rural establishments accounted for 80 per cent of its employment and 70 per cent of its value of output.

In brief, this was an important segment of prerevolutionary Russian industry, predominantly rural and handicraft but the basis for much that was to follow.