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Volume Author/Editor: Gregory Grossman

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Chapter Author: Gregory Grossman

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CHAPTER 3

The Data and Their Flow

*Definition of Output; Nomenclature; Units of Measure*¹

SOVIET usage distinguishes among the following physical results of industrial production:

1. *Finished output* (*gotovaia produktsiia*) comprises the products ready to be shipped out by the given enterprise and is supposed to meet these conditions: (a) passage by the quality inspection department (*otdel tekhnicheskogo kontroliia*, abbreviated as *OTK*), and (b) transfer to the enterprise's finished goods warehouse, or, alternatively, delivery to the buyer. Both (a) and (b) must have taken place by midnight of the last day of the period in question. This is usually formally recorded by the transfer voucher (*sdatochnaia nakladnaia*), which bears the signatures of the head of the producing shop, the *OTK*, and the chief of the warehouse.² There is, however, ample evidence (some of which will be referred to in later chapters) that the formalities are not always strictly adhered to. Moreover, these conditions are clearly not applicable to some portions of industrial output, such as electrical energy or "work of an industrial nature," for example.

2. *Semifinished products* (*polufabrikaty*) are the output of a single shop intended for further fabrication within the same enterprise. The distinction between these and finished output depends on the degree of vertical integration of the enterprise. Both are supposed to meet certain minimum technical specifications.

3. *Goods in process* (*nezavershennoe proizvodstvo*) are those whose processing has not yet been completed in the given shop.

¹ On the formal requisites and classification of "output," see: L. M. Volodarskii, *Promyshlennaia statistika* [Industrial Statistics], Moscow, 1954, pp. 19ff.; D. B. Savinskii, *Kurs promyshlennoi statistiki* [A Course in Industrial Statistics], 4th ed., Moscow, 1954, pp. 68-71; S. Shchenkov, *Otchetnost' promyshlennykh predpriatii* [Reporting by Industrial Enterprises], Moscow, 1952, pp. 35-40; M. Kh. Zhebrak, *Kurs promyshlennogo ucheta* [Course in Industrial Accounting], Moscow, 1950, p. 242; *Planovoe khoziaistvo*, 1955, No. 3, p. 80; and A. I. Ezhov, *Statistika promyshlennosti* [Statistics of Industry], Moscow, 1957, pp. 72-74.

² A. Margulis, *Bukhgalterskii uchet v otrasliakh narodnogo khoziaistva SSSR* [Accounting in the Various Branches of the Soviet Economy], Moscow, 1957, p. 191. For machine-building, Ia. S. Bebchuk, *Uchet, kalkuliatsiia i tekhnicheskaiia otchetnost' mashinostroitel'nogo predpriatii* [Record-Keeping, Calculations, and Engineering Reporting in the Machine-Building Enterprise], 2nd ed., Moscow, 1954, p. 125.

4. *Work of an industrial nature* (*raboty promyshlennogo kharaktera*) consists of services such as repair (of equipment, shoes, clothing, furniture, etc.), finishing (e.g. plating), and the industrial processing of customers' materials. It includes the "capital repair" of the enterprise's own equipment. It does not include the repair of buildings and structures, which is classified as construction work.

5. *By-products* (*pobochnye produkty*)—see the following item.

6. *Waste products* (*otbrosy, otkhody*) are distinguished from by-products in that the latter are supposedly useful, whereas the former are not, although operationally the distinction rests on whether the goods are or are not included in the national plan along with the so-called basic products.³

Only items 1, 2, and perhaps 5 are relevant for our purposes.

Goods that have been rejected by quality inspection within the plant, or by a customer after shipment, for failure to meet minimum quality standards or specifications constitute defective output—the famous *brak* of Russian terminology. All *brak* is supposed to be excluded—or if already included, to be deducted—from the recorded output,⁴ although there is ample evidence that it is in fact frequently included (see Chapter 5).

Commodity nomenclature, specifications, and units of measure appear to be standardized, to a large extent, for planning and statistical purposes, and an elaborate commodity classification appears to be in effect.⁵ Although in most instances it is possible and practicable to measure a given product in more than one physical unit,⁶ generally the enterprise reports the output of a commodity in only one physical unit, namely, and for obvious administrative reasons, the one that is specified in its plan. A few items, however, are reported in two different physical units simultaneously.⁷

But of course many commodities are so heterogeneous that a simple summation in physical terms is of dubious meaning. Soviet statistical practice recognizes this in two ways: (1) when the goods are highly heterogeneous (e.g. spare parts, or a broad category

³ Savinskii, *op.cit.*, p. 70.

⁴ With one exception; see p. 68.

⁵ Extracts of such a commodity classification are reproduced in Ezhov, *op.cit.*, pp. 76f. I have no information as to when the classification was introduced. Nor have I seen evidence of a classification of *industries* as systematic and detailed as the Standard Industrial Classification in the United States.

⁶ For example, textiles—in linear meters, square meters, or tons; flat objects (glass, leather)—in square meters or tons; fluids—by weight or volume; equipment—in units, by weight, or in power capacity (e.g. kw); and so forth.

⁷ Shchenkov, *op.cit.*, p. 52.

such as "furniture"), they are accounted for in value terms only; and (2) when the commodity is a heterogeneous one, but nonetheless possesses some measurable characteristic, it may be converted into equivalents, that is, into so-called "conventional physical units" (*uslovnyye natural'nye izmeriteli*). In the latter case, the conversion factors are chosen either according to relative consumer "utility" (often merely a simple technological property) or according to relative labor-intensity of production. The former method of conversion seems to be the more common one. Thus, tractors of different horsepower rating are converted into conventional units of 15 hp each; freight cars of different load capacity, into two-axle units; soap of different fat content, into standard units of "solid household soap with 40 per cent fat content"; nitrogenous fertilizers, into units of ammonium sulfate; fuel, into conventional units of coal containing 7,000 calories per kg; building stone, into units of conventional structural brick; and so forth. Where no such technological conversion is advisable or meaningful, but aggregation is nonetheless desired, relative labor-intensity is sometimes used, for instance, in children's and men's footwear.⁸ However, it seems that even when reduction to "conventional physical units" takes place, the enterprises also report the corresponding figure in natural units, and the published statistics apparently are expressed more often than not in natural units.

As may be expected in the case of a command economy such as the Soviet one, the designation of the unit of measure, together with the closely associated problem of commodity nomenclature and quality specification, is of very great importance. These are the categories in terms of which plans are drawn up, production commands issued, allocation of chronically scarce supplies made, and, last but decidedly not least, the performance of enterprises judged. The statistical categories automatically become, in Alec Nove's apt phrase, "success indicators,"⁹ and therefore the planners and pro-

⁸ On the conventional physical units, see especially *Slovar'-spravochnik po sotsial'no-ekonomicheskoi statistike* [Dictionary and Manual on Social and Economic Statistics], Moscow, 1948, p. 111; Savinskii, *op.cit.*, pp. 78-80; and Ezhov, *op.cit.*, pp. 78-80. The last source gives sets of conversion coefficients for soap, nitrogenous fertilizers, and shoes. An interesting critique of the conversion of tractors to 15 hp units appeared in *P.E.G.*, Sept. 14, 1958, p. 3.

⁹ A. Nove, "The Problem of 'Success Indicators' in Soviet Industry," *Economica*, February 1958, pp. 1-13. This is a very informative discussion of the problem of "success indicators" in Soviet industry and of the recent Soviet struggle with it. A quite different struggle with the problem of nomenclature

ducers cannot remain neutral toward them. For the purpose of this study, the significance of nomenclature and units of measure is twofold. First, there is the question of the descriptive precision (or better, its opposite—ambiguity) with which the commodities are designated in the published statistics, and of the stability of the nomenclature over time. This question will be referred to again in Chapter 7. Secondly, there is the problem of the response of enterprises to the “success indicators,” and its likely impact on the reliability of Soviet physical output data. This is taken up in the section on devaluation of the physical unit of measure in Chapter 5.

Continuous Reporting of Industrial Output

Soviet statistics of the physical output of industry are compiled in two ways: by continuous reporting on the part of the larger enterprises, and by periodic censuses of the smaller ones.

The range of continuously reporting enterprises in the earlier period corresponded with large-scale industry.¹⁰ The distinction between large- and small-scale industry had its genesis in pre-revolutionary statistics (which did not cover most small establishments) and was taken over, partly for reasons of expediency, by the first (1918) Soviet census of industry. That census enumerated all industrial establishments which met the general qualification of employing at least 16 persons with the aid of mechanical power or at least 30 persons without mechanical power, or which met certain special qualifications in many branches of industry. The Russian word for this kind of qualification is *tsenz*, and the aggregate of establishments meeting it was therefore known in the early period as *tsenzovaia promyshlennost'*, which is usually, but inaccurately, rendered into English as “census industry.” The general limit of 16 (or 30) persons remained as the dividing line between large- and small-scale industry, but the specific qualifications for certain branches underwent considerable evolution.¹¹ With the development

and units of measure, in the U.S. War Production Board, is discussed by D. Novick and G. A. Steiner in *Wartime Industrial Statistics*, Urbana, 1949.

¹⁰ See the resolution of the Council of Labor and Defense on reporting by state, cooperative, and private enterprises, etc., dated March 7, 1922, published in *Ekonomicheskaya zhizn'*, March 25, 1922 (also in *Biulleten'*, No. 64, April 16, 1922, pp. 41-43).

¹¹ This evolution can be traced from the following sources: Ia. P. Gerchuk, “Promyshlennaia statistika” [Industrial Statistics] in V. E. Den and B. I. Karpenko, *Khoziaistvennaia statistika SSSR* [Economic Statistics of the USSR], Leningrad, 1930, p. 142; *Sotsialisticheskoe stroitel'stvo SSSR* [Socialist Con-

of planning, the notion of large-scale industry (i.e. continuously reporting industry) based on size alone with no relation to the administrative context became inconvenient. Thus, sometime between 1936 and 1944, all "basic" enterprises, regardless of size, subordinate to *industrial* (though not other) ministries, but excluding enterprises of district significance only, were incorporated into the concept of large-scale industry, and have been reporting continuously ever since.¹²

Reporting by the individual enterprise is rigidly governed by its prescribed roster of reports (*tabel' otchetnosti*) and is largely done on standard forms prescribed by TsSU and the Ministry of Finance. TsSU specifies a minimum list of products (*nomenklatura izdelii*) whose physical output is subject to continuous centralized reporting by all producers. This list is based on, but is somewhat longer than, the range of products in the annual economic plan.¹³ Production for the enterprise's own use is not exempt from reporting.¹⁴ In addition, ministries and their subdivisions—and, since 1957, presumably also the *sovnrkhozy* (regional economic councils) and their departments—impose additional reporting requirements on subordinate enterprises, so that the individual enterprise often has to submit long, frequent, and detailed production statistics (not to mention other information).¹⁵

struction in the USSR, Moscow, 1936, p. 703; *Slovar'-spravochnik po sotsial'-no-ekonomicheskoi statistike* [Dictionary and Manual on Social and Economic Statistics], Moscow, 1944, p. 55; S. Genin, "Edinovremennyi uchet melkoi podsobnoi promyshlennosti" [One-Time Survey of Small-Scale Subsidiary Industry], V.Š., 1951, No. 1, p. 87; and Savinskii, *op.cit.*, p. 58.

¹² *Slovar'-spravochnik*, 1944, pp. 55f.; Genin, *op.cit.*, p. 87.

¹³ *Slovar'-spravochnik*, 1948, pp. 110f.; A. I. Ezhov, *Promyshlennaia statistika* [Industrial Statistics], Moscow, 1954, p. 64. The most useful sources on the formal aspects of industrial reporting are the two books by Shchenkov (*op.cit.* and *Bukhgalterskii uchet v promyshlennosti* [Accounting in Industry], Moscow, 1955).

¹⁴ An apparent exception to this is the output of building materials by subsidiary units of construction enterprises. Such output is not (or at least at one time was not) reported in value terms, and presumably also not in physical terms (Shchenkov, 1952, *op.cit.*, p. 36).

¹⁵ See sample lists for enterprises in Ezhov, *Promyshlennaia statistika*, pp. 64-66. Some improvement in this regard was brought about by the drive to reduce the excesses in planning and statistical reporting conducted during 1954 and 1955 (see G. Grossman, "In the Land of Paper Pyramids," *Problems of Communism*, July-August 1955, pp. 18-26), and presumably also in connection with the 1957 reorganization of industry. Yet as we have already seen, over 10,000 separate industrial commodities were still subject to *centralized* regular production reporting in 1957 (A. N. Efimov, *Perestroika*

The enterprise has been required to report physical output data by *telegraph*, daily or every ten days for the most important commodities (e.g. fuel, power, steel), and monthly and quarterly for the full range of products subject to reporting.¹⁶ Before the middle of 1957 these reports were dispatched only to the appropriate higher level within the ministerial organization; since then, they have been dispatched directly to *TsSU*, and possibly also to the *sovnarkhoz* or one of its subdivisions. In addition, another monthly report containing substantially the same information, but on standard forms, is submitted by mail, and must be sent out by the third day of the month following the month reported on. The definitive annual report has to be sent out by the 25th of January. The so-called current (i.e. more-frequent-than-annual) reports are signed by the director of the enterprise, the chief accountant, and the head of the planning department. Annual reports are signed by the first two only.

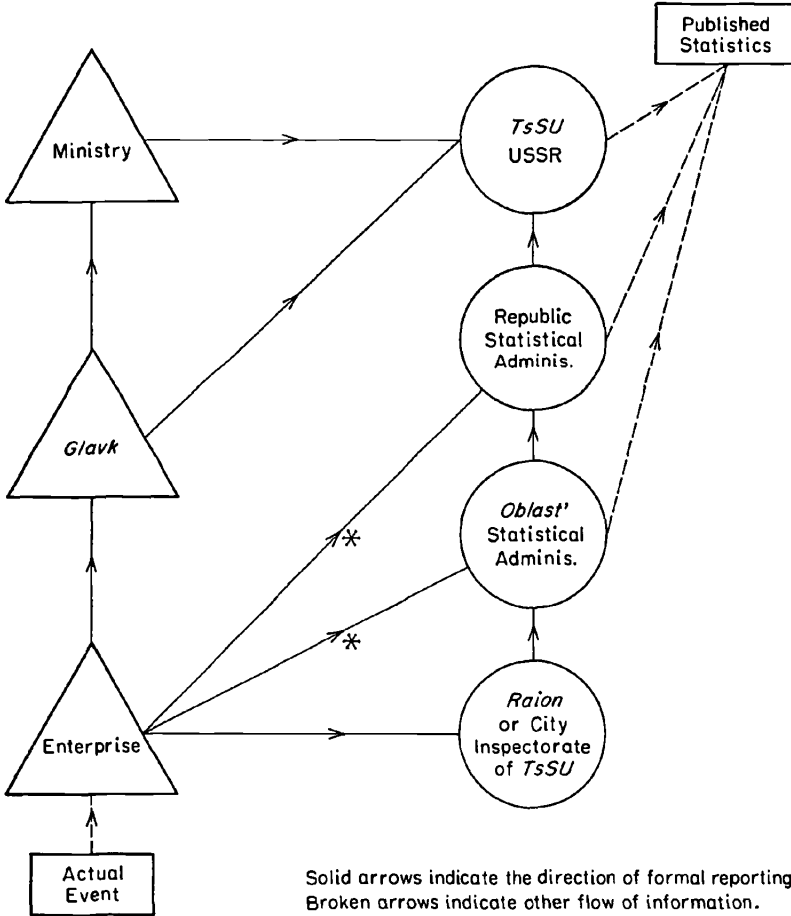
Before the middle of 1957 the enterprise submitted its (mailed) monthly and annual reports simultaneously to its superior in the economic-administrative hierarchy—"trust," *glavk* (chief administration), etc.—to the district inspector of *TsSU*, and to the *oblast'* statistical administration. (The annual report went, and presumably still goes, to the local branch of the *Gosbank* as well.) Thus the data entered and flowed upward through two channels, the economic-administrative hierarchy and the statistical apparatus, as Chart 1 shows. The intermediate echelons were not only formally charged with ascertaining the timeliness, completeness, and accuracy of the reports, but were also expected to analyze their substantive content and to render written evaluations of the work of the enterprise within ten to fifteen days of the receipt of each report from an enterprise. This exacting requirement by itself goes far to explain the prevailing tendency at the intermediate levels to mini-

upravleniia promyshlennost'iu i stroitel'stvom v SSSR [Reorganization of Administration of Industry and Construction in the USSR], 1957, p. 90) and, before the abolition of industrial ministries in that year, an enterprise would have to report regularly on over 100 forms, 60 to 70 of which came under centralized reporting and the remainder of which were prescribed departmentally (*ibid.*, p. 94).

¹⁶ The information in this paragraph rests primarily on Shchenkov's two books (*op.cit.*); cf. L. M. Volodarskii, *Statistika promyshlennosti i voprosy planirovaniia* [Statistics of Industry and Planning], Moscow, 1958, p. 26. Seventy-three products are subject to monthly telegraphic reporting (*V.S.*, 1959, No. 3, p. 69).

CHART 1

The Flow of Statistical Data Until Mid-1957
(from the actual event to the published statistics)



* In the union republics divided into *oblasti* the enterprise reported to the *oblast'* statistical administration; otherwise, directly to the republic statistical administration.

Note: For the sake of simplicity, this chart (unlike Chart 2) does not show the submission of consolidated reports by the various levels of the statistical apparatus to the corresponding levels of the Party, the government, and the planning hierarchy. For the same reason, it is here assumed that the ministry is a "union" one. A "republic" ministry or a "union republic" ministry on the republic level, and its *glavki*, presumably reported to the republic statistical administration, rather than to TsSU. Nor does the chart fully apply to "local industry."

mize analysis and to concentrate on mere totaling and tabulation.¹⁷ The reports submitted by these echelons were on the same forms as the reports of enterprises. Ministries and chief administrations appended tables showing frequency distributions of enterprises within their purview arranged by degree of plan fulfillment and stating the amounts of the most important products that were not produced due to plan underfulfillment.¹⁸ Beginning with 1953, other tabulations—on labor productivity, cost of production, and utilization of equipment—also had to be submitted by the intermediate levels with their periodic reports.¹⁹

Whether incidentally or by design, the system of parallel flows of reporting afforded an opportunity to check on distortion at intermediate levels, although I have no evidence that such checks were in fact conducted. But the main reasons for this parallelism were, one suspects, that the ministries and their subdivisions insisted on receiving output data more promptly than the statistical apparatus could supply it and that they did not want to depend on the statistical apparatus for information from the enterprises under their jurisdiction. At any rate, as long as the ministries existed, they refused to give up their part of the parallel flows.²⁰ As we shall see presently, there is reason to believe that the parallelism created a certain amount of tension and jealousy between the statistical authorities and the economic hierarchy, which may not have been entirely unwelcome to the regime.

The abolition of the industrial ministries in 1957 and their replacement by regional economic councils (*sov-narkhozy*) of necessity destroyed *that* system of parallel statistical flows, but could conceivably have created another one resting on the network of *sov-narkhozy*. This did not happen, at least formally, and the statements of high statistical officials at the time gave the definite impression that they seized the opportunity provided by the administrative reform to forestall it.²¹ There may also have been a good deal of

¹⁷ Cf. I. Dugin, "O nekotorykh nedostatkakh v rabote s kadrami" [On Certain Shortcomings in Personnel Work], *V.S.*, 1951, No. 5, p. 55; and *V.S.*, 1955, No. 1, p. 82.

¹⁸ Shchenkov, 1955, *op.cit.*, p. 387.

¹⁹ *V.S.*, 1952, No. 1, p. 19.

²⁰ At least this is what Starovskii, head of *TsSU*, alleged when the ministries were about to be abolished (*V.S.*, 1957, No. 4, p. 15).

²¹ See the editorial in *V.S.*, 1957, No. 2; Starovskii's talk at an all-union conference of statistical workers, June 4, 1957, reported in *V.S.*, 1957, No. 4, pp. 12ff.; and a brief account of the same conference in *P.E.G.*, June 12, 1957, p. 3.

maneuvering by interested parties on this issue while the industrial reorganization was still being drafted and discussed. This much is suggested by the vacillation on the subject of statistics (and indeed on the reform as a whole) in the language of the successive official statements on the industrial reorganization. The initial resolution of the plenary session of the Central Committee, dated February 14, 1957,²² spoke only in passing of "strengthening the whole system of state statistics." A month and a half later, in his so-called "theses" on the reorganization of industry,²³ Khrushchev took a definite stand in favor of elimination of parallel flows and of what came to be referred to as the "centralization of record-keeping and statistics." He explicitly stated that, under the new conditions, "industrial enterprises and construction projects [*stroiki*] [would] submit reports containing a minimum number of items [and] only to the agencies of TsSU SSSR." This seemed to rule out the submission of *any* reports to the enterprises' administrative superiors, and may be taken as a complete victory for the statistical authorities. However, a little over a month later, on May 7, 1957, in his talk on the proposed industrial reorganization at the Seventh Session of the Supreme Soviet, while repeating the position of his "theses" on the centralization of record-keeping and statistics, he failed to state explicitly that enterprises would submit their reports *only* to the statistical agencies.²⁴ It is not unlikely that during that month this had become an issue.

Speaking before the all-union conference of statistical workers that convened in Moscow between June 4th and 8th, 1957, to discuss the reforms, Starovskii, the head of TsSU, elaborated on the brief paragraphs on statistics in Khrushchev's speeches. The reorganization of industrial administration, he stated, "removes the hitherto existing barriers to the liquidation of parallel reporting . . ." and now that the ministries are to be abolished, "there are no more obstacles to the centralization of *uchet*." He continued: "The agencies of TsSU will now receive all the necessary reports directly from enterprises subordinated to the *sovnarkhozy*, will process them and submit the appropriate data to the *sovnarkhozy* . . . TsSU will process the statistical data by territory and branch [*otraslevoi*] classifications

²² *Pravda*, Feb. 16, 1957.

²³ *Pravda*, March 30, 1957.

²⁴ *Pravda*, May 8, 1957, p. 4. He did say somewhat vaguely that the collection and processing of reported data would be "concentrated" in the agencies of TsSU. It may also be noted that the law on industrial reorganization passed three days later omitted all reference to statistics (*Pravda*, May 11, 1958).

and will submit them to the Government and to the *Gosplan*. No other parallel source of data should be retained; there is absolutely no need of that." He further promised a considerable reduction in the volume of reporting, and called for the establishment of offices ("stations") for machine-processing of data, one in each of the over one hundred newly founded economic regions. While the *sovnarkhozy* are thus to rely on the information transmitted to them by the statistical apparatus, he conceded that, "as far as some reports are concerned, *it seems that it will be necessary* to retain the practice of submitting a second copy to the appropriate trust or other agency subordinate to the *sovnarkhoz*. However, the local agencies of *TsSU* will have to handle the consolidation and processing of data in such a way that the *sovnarkhozy* receive them in time, and that there be no need for parallel processing of reports in the *sovnarkhozy*. The second copy [submitted directly to the trust, etc.] should be used only as a source of information for individual enterprises." He added that the proposed system was to be a serious test of timeliness and accuracy for the statistical apparatus.²⁵

The compromise did not seem to satisfy everyone on both sides. An official of the (then doomed) Ministry of the Coal Industry, apparently expressing the view of an economic administrator, complained "sharply" that the statistical authorities underestimated the importance of direct reporting by enterprises to their superiors for planning and day-to-day management, and argued that more of the "departmental" reporting be salvaged.²⁶ On the other hand, the chief of the Leningrad statistical administration asserted that if the "branch administrations" of the *sovnarkhozy* were permitted to receive copies of enterprise reports at all, they would not be content to limit their use to managerial functions, but would revive the "vicious" practice of parallel processing of data.²⁷

Be that as it may, parallelism in the flow of reporting has been, at least formally, abolished, although a copy of each report is submitted by the enterprise to its administrative superior within the *sovnarkhoz* framework, "not for consolidation, but only for use in the direction of enterprises."²⁸ The local statistical administrations must transmit to the *sovnarkhozy*, between the fourth and sixth day

²⁵ V.S., 1957, No. 4, pp. 12-17. My emphasis.

²⁶ See summary of statement by A. G. Pervukhin at the conference (*ibid.*, p. 24).

²⁷ *Ibid.*, p. 34.

²⁸ Ezhov, *Statistika promyshlennosti*, p. 24.

of the month, data on plan fulfillment by the enterprises during the preceding month. However, it is admitted that this information is sometimes tardy.²⁹ Under the new conditions the local agencies of the statistical apparatus are also charged with assembling and compiling materials on the basis of which the *sovmarkhozy* draft their plans. The chief measures on industrial reporting that TsSU is said to be working on now are: reduction and simplification of record-keeping and reporting; mechanization of data processing (utilizing the network of machine "stations" referred to above); and the working out of techniques to detect autarkic and "localistic" tendencies in the economic regions.

The new pattern of the flow of reporting is shown in Chart 2.

Censuses of Small-Scale Industry

Small-scale industrial enterprises (later, only the *subsidiary* enterprises among them as far as *industrial* ministries were concerned) have been exempt from continuous reporting, and their output has been accounted for instead by periodic surveys and censuses. As an exception, monthly reports were required of small-scale subsidiary enterprises (except those belonging to collective farms) between 1949 and 1954, although annual censuses of small-scale industry continued through this period as well.³⁰ In 1954 there were about 50,000 subsidiary small-scale industrial enterprises, presumably excluding enterprises subsidiary to *kolkhozy*, and they were said to account for less than 4 per cent of the gross output of industry.³¹ However, in some branches of industrial production, particularly in consumer goods and building materials, their relative share was presumably considerably larger than that. And, of course, in earlier years these shares were much larger.

It should be noted that before 1933 the censuses of small-scale industry did not inquire into output in physical units; nor was there any census of small-scale industry for 1928, or 1927/28, the benchmark dates for many studies of the Soviet economy. Rather, the official data for *all* industry for that year are presumably summations of the *reported* output of large-scale industry and corresponding

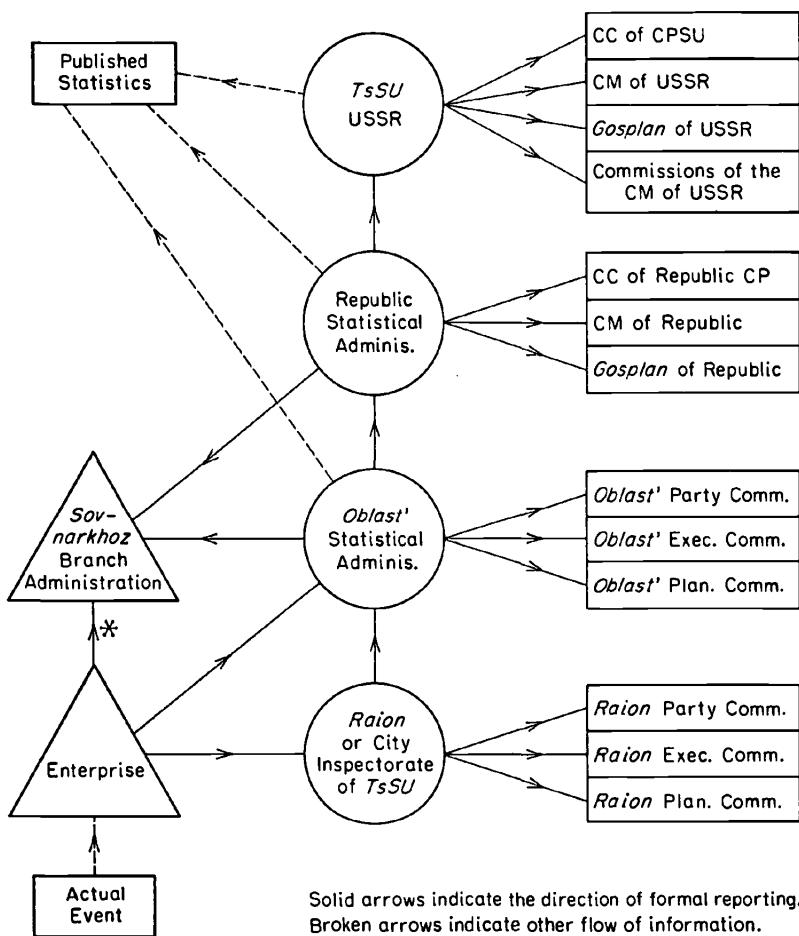
²⁹ L. M. Volodarskii, "Organy gosudarstvennoi statistiki v novykh usloviakh" [The State Statistical Agencies in New Conditions], *P.E.G.*, July 6, 1958, p. 3. The author is deputy chief of TsSU SSSR in charge of industrial statistics.

³⁰ B. Glusker and P. Krylov, "O sisteme pokazatelei narodnokhoziaistvennogo plana" [On the System of Indicators in the Economic Plan], *P.Kh.*, 1954, No. 5, p. 86; and Genin, *op.cit.*, p. 88.

³¹ Glusker, *op.cit.*, p. 81.

CHART 2

The Flow of Statistical Data After Mid-1957
(from the actual event to the published statistics)



Solid arrows indicate the direction of formal reporting. Broken arrows indicate other flow of information.

* The enterprise submits a copy of its report to the branch administration of the *sovnarkhoz* ostensibly for operational purposes only.

CC = Central Committee
 CM = Council of Ministers
 CP = Communist Party
 CPSU = Communist Party of the Soviet Union

Note: If the republic is not divided into *oblasti*, the enterprise reports directly to the republic statistical administration. The chart does not fully apply to industry subordinated to local soviets (as opposed to *sovnarkhozy*).

Source: Ezhov, *Statistika promyshlennosti*, 1957, p. 25.

estimates for small-scale industry. The estimates were based on information in the possession of internal revenue authorities, and in part on the outdated results of the 1925 census of small-scale industry.³² The latter source was of little consequence for estimating physical output of small-scale industry, as it had not inquired into that aspect.³³

This raises the question of possible underestimation of the industrial statistics for 1928, since write-downs in reports to fiscal authorities, especially by private firms and individual craftsmen, may well be suspected because of (1) the desire to avoid or lighten the tax burden, and (2) general noncooperation with the representatives of a "socially hostile" regime. Underreporting was undoubtedly facilitated by the fact that most small-scale enterprises kept no systematic records whatever.³⁴

This suspicion is confirmed by an official comment on the next census of small-scale industry, conducted in late 1929 and early 1930, and covering the operating year 1928/29: "It is necessary to note a certain understatement of the data for the capitalist sector. The understatement arises from the tendency of the private entrepreneur to conceal the actual volume of his output, the extent of labor employment, his receipts, etc., which has had a particular impact on the data due to the coincidence of the census period with intensive collectivization [of agriculture] in a number of regions. The underrecording in the private sector is partly compensated by the inclusion of data on home-workers, under the putting-out system, in the private capitalist sector."³⁵ The census attributed only 0.9 per cent of all gainfully employed and 2.8 per cent of gross value of output to the capitalist sector within small-scale industry.³⁶ Thus, presumably, the understatement might not have been very large compared to the total output of small-scale industry, and even

³² Ezhov, *Promyshlennaia statistika*, p. 378.

³³ See *Trudy TsSU SSSR* [Works of the Central Statistical Administration], Moscow, 1926-1928, Vol. 33, Part 2. There was also a sample survey of small-scale industry in 1927 (see *Narodnoe khoziaistvo SSSR* [The Economy of the USSR], Moscow, 1932, p. 684); its results are adjudged unsatisfactory by R. Kh. L'vova ("Razvitie metodologii ischisleniia ob'emnykh pokazatelei promyshlennoi produktsii SSSR" [Development of the Methodology of Calculating Indicators of the Volume of Industrial Output in the USSR] in *Ocherki po istorii statistiki SSSR* [Essays on the History of Statistics in the USSR], Moscow, 1955, p. 229).

³⁴ Ezhov, *Promyshlennaia statistika*, p. 378.

³⁵ *Narodnoe khoziaistvo*, 1932, p. 647. "Private capitalist" establishments were those employing at least three hired persons.

³⁶ *Ibid.*, p. 97.

less compared to the output of all industry, to which small-scale industry contributed 20 per cent in 1928/29 according to the census. But it might possibly have been appreciable with regard to individual products, especially consumer goods.³⁷

The question of a similar bias in the data on the private *non-capitalist* ("petty commodity") sector, which comprised artisans and handicraftsmen, was not raised in the same context. According to the census, this sector accounted for 73.8 per cent of all gainfully employed and 45.1 per cent of the gross value of output in small-scale industry. Nonetheless, it seems plausible that similar considerations might have prompted the producers in this sector to underreport their output. That is, the understatement of the output of some commodities by the 1928/29 census might have been considerable.

Another method could have been used in retrospect to estimate the output of small-scale industry in 1928, namely, backward extrapolation from the census for 1928/29. While I have seen no indication in the literature that this method was used for *physical* output statistics, this was very likely the method used to obtain the estimate of the gross *value* of output of small-scale industry for 1928 that appears in Krasnolobov's authoritative and well-known article.³⁸ The census figure for the gross value of output in 1928/29 is 5.32 billion rubles at current prices,³⁹ which were 8 to 10 per cent higher than 1926/27 prices.⁴⁰ Deflating accordingly, one obtains 4.84 to 4.93 billion rubles at 1926/27 prices; Krasnolobov's implicit figure for 1928 is 4.97 billion rubles at 1926/27 prices. If this is the way Krasnolobov obtained his estimate for the value of output of small-scale industry in 1928, if (as I have just suggested) the gross value of output of small-scale industry was understated in the 1928/29 census even more than the official comment indicates, and if there actually was no substantial increase in the output of small-scale industry from 1928 to 1928/29 (as seems reasonable in view of the

³⁷ The census showed that small-scale industry was responsible for over one-third the total output of manufactured consumer goods (cf. M. Podgoretskii, "Vsesoiuznaia registratsiia predpriatii sotsialisticheskoi promyshlennosti" [All-Union Registration of Socialist Industrial Enterprises], *Plan*, 1934, No. 7, p. 5).

³⁸ N. Krasnolobov, "Faktory rosta narodnogo dokhoda v sotsialisticheskom obshchestve" [Factors in the Growth of National Income in a Socialist Society], *Problemy ekonomiki*, 1940, No. 9, p. 62.

³⁹ *Narodnoe khoziaistvo*, 1932, p. 84.

⁴⁰ G. Demirchoghlian, "Nekotorye itogi perepisi promyshlennosti SSSR za 1933 g." [Some Results of the Industry Census for 1933], *Plan*, 1935, No. 8, p. 10.

political and economic climate of the time), then Krasnolobov's figure for the gross value of output of *all* industry in 1928, which is the most complete of all such Soviet figures for that year, may be on the low side.

The unsuccessful attempts in 1931 and 1932 to cover the output of small-scale establishments by questionnaires have already been mentioned.

In 1933 an economic plan was drawn up for the first time for all industry, rather than for large-scale industry only,⁴¹ and the first of a more regular succession of censuses of small-scale industry was taken for that year early in 1934. This census, like its successors, inquired into output in physical terms. Although it was less extensive than the census of 1929, covering only enterprises with at least three workers or a mechanical source of power (but including even smaller subsidiary enterprises of collective and state farms) and omitting the now less important private sector entirely, *TsUNKhU* estimated that the resulting underevaluation amounted to only about 100 million current rubles of gross output.⁴² In connection with this census a complete registration of all industrial enterprises, large and small, was carried out, the success of which was credited to the newly established network of local statistical agencies.

Thereafter, as we have seen, censuses of small-scale industry were conducted for 1935, 1937, and annually until 1954, with the exception of 1948. It was decided in 1954, in conjunction with a determined campaign to simplify paper work and to reduce administrative staffs, to limit the taking of censuses of small-scale subsidiary enterprises to two years out of every five. At the same time, such enterprises were relieved of the necessity of reporting monthly, which (as we have seen) was introduced for them in 1949.⁴³

⁴¹ Savinskii, *op.cit.*, p. 59.

⁴² Demirchoghlian, *op.cit.*, p. 10 footnote; cf. Podgoretskii, *op.cit.*

⁴³ See Ezhov, *Statistika promyshlennosti*, pp. 30-34, for the content of the censuses. 1955 was a census year according to this source.

