Presentation of Services as Related to Statistical Units

Statistisches Bundesamt
Germany

Subj.: Presentation of services as related to statistical units

Preliminary remarks

At the 24th meeting of the Statistical Commission of the United Nations, questions concerning the statistical units were also discussed within the scope of the revision of the International Industrial Statistical Classification. The following remarks are intended to describe the basic features of the usefulness of the individual statistical and tabulation units. It is obvious that in this connection reference is made to the units that have been developed by the economy and economic statistics of the Federal Republic of Germany. Most of the remarks should nevertheless have their equivalent in countries whose economic system is based upon a market economy.

This paper is not meant to be a comprehensive discussion of all statistical units and the methodological problems connected with their utilization.

1. Functions

It is the purpose of economic statistics to present within a systematic classification the economic information recorded for statistical units. Depending on the statistical unit or classification system selected, the same facts may in the individual case lead to entirely different statistical information. This is due to the fact that the most widely employed units - enterprises and local units - in many cases are performing more than just one economic activity, but have to be allocated to only one heading of the classification for presenting their characteristics. The main activity of such heterogeneous units as a rule is determined by the largest partial unit measured in terms of value added - generally the gross value added less turnover tax (Chart 1)[1] - the emphasis being alternatively placed on the major part of employees. The fact that economic activities according to the classification used may be shown in differing ways is due to the difference between classifications as to the degree of subdivision and the definition of the contents of the individual items. Basic investigations concerning these questions have been made in the Federal Republic of Germany already in the 1950s. In the following we shall deal in greater detail only with the interactions between statistical units and the presentation of production, and especially the production of services. Starting point

will first be a single-unit enterprise whose activities are limited to one branch of economic activity. Subsequently, the enterprise concept will gradually be developed for a multi-unit enterprise with a heterogeneous range of commodities. Within the scope of this model, the abstract definitions shown for the individual statistical units will first be examined as to their actual contents, presenting their respective delimitations. Parallel to the extension of the enterprise concept from the single-unit to the multi-unit enterprise, the survey characteristics corresponding to the individual statistical units will be analysed, presenting their interrelations and especially following up the origin of the value added on the enterprise level.

In the following, we shall briefly discuss the derivation of value added for enterprises of production industries since they are in the centre of the considerations. Service enterprises will not be discussed in greater detail because they are already covered and shown under the heading of services, as is the case, as a rule, with their parts. Leaving specific questions concerning the coverage of value added for service enterprises out of account, the remarks on the enterprises of production industries analogously apply, however, to service enterprises as well.

2. Derivation of gross value added

The derivation of the individual value added concepts is based upon production. For producing enterprises [2], the value of production is composed of (in each case excluding value added tax):

- turnover from own commodities and services,
- turnover from merchandise,
- plus/minus changes in stocks of commodities from own production,
- plus own consumption,
- own-account construction as well as major repairs if carried as assets.

2) Producing enterprises are defined in Subject-Matter Series 18, Series 1 of November 1986, "Konten und Standardtabellen" (Accounts and standard tables), p. 66, where it says: "For the purposes of national accounts, producing enterprises (in the narrower sense) are all enterprises which are mainly active in agriculture and forestry (incl. animal keeping and fishing), in producing industries, trade and transport, and in the service sectors (excl. credit institutions and insurance business). Included are non-profit organizations performing their services essentially for enterprises without receiving a specific remuneration and which are financed by these enterprises (e.g. employers' associations, business associations, Chambers, scientific institutes predominantly financed by enterprises) as well as commercial and non-commercial ownership of dwellings incl. the utilization of owner-occupied dwellings".

The intermediate consumption has to be deducted from this value, which is also referred to as total output. Intermediate consumption essentially includes:

- consumption of raw materials and supplies,
- input of merchandise,
- expenditure for contract and commission work and other industrial/handicraft services,
- rents and leases,
- other expenditure.

Chart 1 presents these relationships in the form of an account. This diagram shows that for producing enterprises services have to be considered in the case of production and intermediate consumption.

Where in the following text only the term "value added" is used, this always refers to gross value added at market prices, but excluding turnover tax.

The formal derivation of the value added concept reveals that the major part of the value added created by enterprises is connected with market transactions. It follows from the statement that the production of value added is related to market transactions that these transactions must be performed between autonomous units. These units may be enterprises, private households (incl. non-profit organizations) or the government. It seems necessary to refer to this prerequisite since it must be distinguished between the realization of that part of the value added which derives from a market transaction and the "accumulation" of this value added part in the production process at the enterprise. As long as a product has not been transferred from one autonomous unit to another, it is not possible to state the amount of value added. This amount may even be negative if the selling price of the product is lower than its costs. The differentiation of the production process according to several and possibly also spatially separate steps of production therefore must not cut off the market reference. It follows from this prerequisite that it is always necessary to differentiate between the value added created by the transaction at an autonomous unit and the allocation of this value added to the partial units participating in its accumulation.

3. Statistical units and their definition

The definitions of the individual statistical units provide the basis for the following discussion. The definitions are describing merely the characteristic

features of the individual statistical units and do not consider any exceptions and special arrangements. The definitions will be extended only later on in connection with further considerations.

3.1 The enterprise

In economic statistics, the enterprise is defined as the smallest legally autonomous unit [3], which for reasons of commercial law and/or on tax grounds is keeping books and drawing up balances. The legal form of the enterprise is of no importance for German economic statistics, i.e. it may be carried on in the form of a joint-stock company or by a natural person. In the Federal Republic of Germany as in several other countries, the enterprise is the central statistical and tabulation unit for economic statistics because it engages autonomously in economic activities, i.e. it performs independently the tasks described in the list of functions and takes the relevant decisions on its own responsibility. The main difference between the enterprise and other institutions is that its activity is aimed at selling the goods produced against a specific remuneration which is at least covering the costs.

It is possible to decide for an enterprise between principal, secondary and ancillary activities [4]. The principal activity defines the primary emphasis of an enterprise or of another heterogeneous unit. As secondary activities are considered those activities which are not classified to the same heading as the principal activity. An activity is regarded as an ancillary one if

a) it produces exclusively services,

b) because of its nature it is found in every similar enterprise,

c) it provides services only to those units within the enterprises which perform principal or secondary activities 5).

3.2 The local unit

The local unit is a production unit (e.g. a workshop, shop, office, mine or warehouse) which is situated in a geographically separate place, in which one

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3) Statistical Office of the European Communities - Coordinated annual survey on industrial activities in the member countries of the European Communities, Directive of the Council on the Organization of the Survey, Doc. No. 4000/77-d, p. 10.

4) Statistical Office of the European Communities: General Industrial Classification of Economic Activities within the European Communities, Luxembourg 1970, p. 18.

5) Statistical Office of the European Communities, ... op. cit., p. 18. United Nations: International Standard Industrial Classification of all Economic Activities, New York 1968, p. 14.

or more persons work for the account of a single enterprise (local unit in the strict sense). In addition to the local unit in the strict sense, there is the local unit in the wider sense. It consists of a local unit and satellite units dependent on it and situated in its immediate vicinity [6].

In the following, the term local unit will always be used in its wider sense.

3.3 The kind-of-activity unit

The kind-of-activity unit is the statistical unit that carries on a single activity - whether spatially separated or not, but in any case combined for purposes of presentation - which is characterized by the nature of the goods or services produced or by the essential identity of the production process employed, this activity being defined in terms of a standard classification of economic activities [7].

3.4 The establishment

For practical purposes, the establishment is defined as: the combination of activities and resources directed by a single owning or controlling entity toward the production of the most homogeneous group of goods and services, ... at one location ... for which separate records are available that can provide the data concerning the production of these goods or services and the materials, labour and physical resources (both direct and indirect) used in this production [8].

This definition is narrower than those contained in the International Standard Industrial Classification of all Economic Activities.

3.5 The technical unit

The technical unit is a section or department of the establishment which engages directly in the production of a type of goods made or services rendered, or performs a stage of the production of these goods or services in the establishment. [9]

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6) Statistical Office of the European Communities, ... op.cit., p. 20 f.
7) Statistical Office of the European Communities, ... op.cit., p. 22.
8) United Nations, ... op.cit., p. 12 f.
9) United Nations, ... op.cit., p. 16 f.

3.6 Ancillary units

Ancillary units are those units providing services which are exclusively intended for the use of other units of the enterprise, as has already been described in connection with the enterprise definition.

4. Statistical units and the coverage of services

4.1 Homogeneous single-unit enterprise

In the case of the homogeneous single-unit enterprise, the coverage of all kinds of data is particularly simple since except for the technical unit and the ancillary unit there is a complete identity of all statistical units, and the data to be recorded can be completely allocated to one branch of economic activity or to the category of goods describing it.

Subdivisions can be made only below the level of the statistical units listed in Chart 2[10], i.e. by technical units and ancillary units. At first, this does not create any problems for the coverage of services since ancillary activities are defined as services and have to be completely distributed to those principal and secondary activities which they are serving. By definition, a homogeneous single-unit enterprise however performs only one (principal and no secondary) activity. Problems could arise only if an enterprise producing several goods which are allocated to one activity would try to allocate the costs for the ancillary activities to the individual goods.

4.2 Homogeneous multi-unit enterprise

At first, the only primary difference between the homogeneous multi-unit enterprise and the homogeneous single-unit enterprise is that the former consists of at least two units which are geographically separate. Since the enterprise is homogeneous, i.e. it is active in only one branch of economic activity or produces only the goods of the heading describing this branch, the data to be reported for the enterprise are identical with the branch of the kind-of-activity unit. For the local units, the data of the enterprise have to be regionalized, i.e. they must be distributed to the various local units. As long as the distribution of the values is based on enterprise data, this will lead - at least theoretically - to correct data for the local units.

Voorburg Group, Stockholm 1957

The adding up of figures of the local units to enterprise data, however, does not always provide the correct result for the enterprise. The employees of the individual local units may certainly be added up to the total of employees. It could, however, be questionable whether the complete personnel expenses are known on the level of the local units. Proceeding from the local units, the data on value added could be calculated only by addition. This procedure is, however, at variance with the ascertainment of the value added because it is a residual value from the production less intermediate consumption calculated on the enterprise level. Since the homogeneity of the statistical units discussed here is determined only via the output - the intermediate consumption may vary in each case - even homogeneous units show different value added rates $\frac{\text{value added}}{\text{production}}$. Moreover, the productivity $\frac{\text{value added}}{\text{factor input}}$ may vary for the individual local units of a homogeneous enterprise.

Definition and number of the local units correspond to definition and number of the establishments. Limitations of the establishment concept of 4.1 are due to the fact that the controlling and managing functions are at least partly rendered independent of the legal entity. Moreover, certain data are no longer available directly and can be derived only from the enterprise data.

4.3 Heterogeneous single-unit enterprises

As compared with a homogeneous single-unit enterprise, the heterogeneous single-unit enterprise is active in at least two areas defined by a standard classification of economic activities. The number of its kind-of-activity units is determined by the number of areas in which the enterprise is carrying on its activities. Since the economic activity also defines the limits between the establishments, these establishments correspond for the single-unit enterprise to the kind-of-activity units.

Heterogeneous single-unit enterprises may have either a vertical or a horizontal integration, but the activities may also be only partly interdependent or completely independent of each other.

A full vertical integration where the entire output of an establishment becomes the input of a - subsequent - other establishment can be observed only if internal production processes of an enterprise are covered statistically.

(German production statistics for instance cover for specific goods both the production intended for sale and the production for further processing in the same enterprise.) A complete horizontal integration which comprises a full range of products does, however, not differ from a partly interdependent or an independent production.

4.4 Heterogeneous multi-unit enterprises

A heterogeneous multi-unit enterprise consists of several local units and is at the same time active in different sectors of the economy. All the problems referred to above may exist in a heterogeneous multi-unit enterprise in combined form. Even though most of the enterprises are not heterogeneous multi-unit enterprises, all survey concepts must proceed from such enterprises if special arrangements are to be avoided.

Chart 3[11] shows a heterogeneous multi-unit enterprise. It consists of three local units which are carrying on activities in a total of 6 sectors of the economy. Since the definition for kind-of-activity units provides that they perform a single activity defined by the kind of the goods produced and by a standard classification of economic activities, this enterprise also comprises 6 kind-of-activity units, as can be seen from the lines of the Chart. The economic classification of the kind-of-activity units does not create any problems. For the branch-specific classification of the local units, however, their subdivision into establishments must be examined. An establishment corresponds to one box of Chart 3. Of the establishment definition, which has been drawn up in operational terms as already quoted on page 5, only the underlined parts are still applying to the heterogeneous multi-unit enterprise:

The establishment is therefore the combination of activities and resources, directed by a single owning or controlling entity toward the production of the most homogeneous group of goods and services, often at one location but sometimes spread over a number nearby sites, for which separate records are available that can provide the data concerning the production of these goods or services and the materials, labour and physical resources (both direct and indirect) used in this production .

The establishments in Chart 3, which are marked by a circle, shall each determine the main emphasis of the local unit.

As easy as it may be to mark the main emphasis in a model, as difficult it should be to actually determine it.

Proceeding from the definitions for the statistical units under No. 4, which have been modified as compared with No. 3, we shall in the following study the requirements to be fulfilled for the calculation of value added.

Charts 4 and 5[12] show the origin of production. While Chart 4 presents the origin of production on the basis of the individual units of production, Chart 5 emphasizes the production procedure.

Chart 4 proceeds from the input on the enterprise level. This input is composed of the own value added and the intermediate goods and services received. This input, which has the same magnitude as the output, is distributed to the various local units. Since this presentation is based upon consolidated values, no increase in total assets and liabilities arises for the local units; internal shipments within enterprises from one local unit to another local unit are eliminated. Within each local unit the production is furnished by technical units and ancillary units. The combination of the production to homogeneous groups of goods yields establishments with their characteristic output. To the extent that this output consists of commodities/physical goods, it includes services in the form of ancillary activities. On the basis of the price of the goods it is not possible, however, to determine the volume of the ancillary activities which have become a physical part of the goods. Only in the case of direct sales of services on the market it is possible to determine their amount directly.

Chart 5 presents production under the aspect of homogeneous output. Irrespective of the method of presentation, both the input and the output must be the same in the two diagrams. However, this form of presentation does not permit to show the share of services in the individual goods either.

In order to determine structural differences in the production procedures of individual branches of economic activity, it is not sufficient to simply

consider the output; it will rather be necessary to study the intermediate goods and services received and the internal operations inside the enterprise.

Before going into further details in this respect, it would seem advisable to return once again to the definition of the enterprise. One important element of the enterprise definition is the requirement that enterprises sell their goods against a remuneration which is at least covering the costs. In view of this objective, it is indispensable to compare for enterprises the output with quantitative data on the input. The enterprises are therefore subdivided by fields of functions or spheres of competence. Such spheres of competence consist of one or more cost sections for which the arising costs are covered by types and allocated to the output, i.e. the cost unit.

The following cost categories can be distinguished:

- costs of materials
- production costs
- overheads

The costs of materials which are used here as a synonym for intermediate goods and services received are covered for enterprises in surveys of the cost structure and in surveys on materials and goods received. A recording of intermediate goods and services received from the market for statistical units other than enterprises should be very difficult since for instance local unit II of Chart 3 could consume intermediate goods and services which initially had been purchased by local unit I. This fact, however, need not necessarily be known to local unit II. If it is known however, this information will be available on the enterprise level before, so that it will already on this level be possible to allocate the intermediate consumption to the individual units. Prerequisite for an allocation of intermediate consumption even on the enterprise level is however that at the time of purchase its exact utilization for specific goods must be known. For a great number of intermediate goods and services at most the unit should be known, i.e. the local unit, the establishment incl. the kind-of-activity unit, the technical unit or the ancillary unit. The purchase of intermediate goods and services which at first still is rather lacking concreteness, becomes however in part concrete with consumption, i.e. during the production of the goods, since there may be great differences of valuation for materials at the time of purchase and of consumption. The consumption of materials can therefore constitute only an auxiliary value for the calculation of value added.

The production costs comprise among others the wages which can be directly attributed to a product. They should,however, represent only the smallest part of personnel expenditure. This can clearly be seen if one considers the main functions existing in an enterprise. According to Gutenberg, seven main economic functions can be distinguished:

1. Management function (management, planning, organization)
2. Procurement function
3. Selling function
4. Production function
5. Formation function
6. Financing function
7. Controll function of cost accounting[13]

Costs of production thus usually emerge only in those cost sections which are directly relating to the economic performance.

This list of functions shows that in a heterogeneous multi-unit enterprise the major part of the personnel expenditure, which, in turn, constitutes the greatest share of value added, may well be accounted for by the so-called ancillary activities. In this context, the term ancillary activities would seem as misleading as is the term overheads as used in the terminology of business administration and which comprises all costs that cannot be allocated directly to the production of a specific product. These reservations reveal, however, that the personnel expenditure for ancillary activities/of the overhead cost sections can b. auxiliary values for the allocation of value added to specific units. The auxiliary values cannot be used, however, for the original calculation of value added.

The ambiguity of the terms ancillary activity and production activity and the resulting danger for statistical surveys becomes obvious if specific main functions of those mentioned above are regionally segregated if for instance an enterprise is selling its goods in its own retail chain. When regarding in isolation the chain of stores of a book club, it would not be surprising if it were allocated to trade rather than to publishing or printing.

If the enterprise reference is not taken into consideration, there may thus be the risk of a wrong allocation of ancillary units to branches of economic

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13) Löffelholz, J., "Repetitorium der Betriebswirtschaftslehre", Wiesbaden 1967, p. 817.

activity. The example cited here for sales can without difficulty be applied to other functions as well. In a highly developed economy with its division of labour all the functions are existing not only as an integral part of an enterprise, but also in legally autonomous form as an independent enterprise. This holds good at least if enterprises incorporated in a combine are being taken into consideration. In the case of such enterprises, even the management may formally be segregated. Other activities involving services may be seen from Table 1.[14] As long as these activities are being performed within an enterprise, they have generally to be assessed otherwise than if they are performed with a legally autonomous status.

The segregation of parts of an enterprise and their combination with enterprises rendering the same services as a main activity will provide an incorrect picture of the economic structure, since also in statistics only units of the same dimensions may be added up.

5. Connections between investigations of economic statistics, statistical units and facts to be presented

Proceeding from the previous remarks, it is now possible to outline for which analyses of economic statistics
- which statistical unit is best suited
- which data may be collected or calculated in this respect and
- which statistical unit provides these data most expediently.

The enterprise should be the most suitable statistical unit for all investigations with a direct market reference. As was already explained above, correct value added figures can be determined only for enterprises. The enterprise is, however, also the unit deciding on investment plans and solving financial questions. Investigations on economic concentration are useful only on the enterprise level too.

Because of their obligation to keep records, which, among others, has been included in the Fourth Directive of the Council of the European Communities on the Coordination of Company Law, the enterprises are able to provide comprehensive data on the economic processes.[15]

14) See annex VI.
15) An overview of the facts to be presented by enterprises subject to the Publication Law is provided by an extract from the Law on the Implementation of the Fourth Directive of the Council of the European Communities on the Coordination of Company Law, attached as annex VII.

For regional analyses - at least on the community level - the local unit is the most suitable unit. At the focus of such investigations should be questions concerning the labour market, production and economic performance. While the local units can directly provide information on persons engaged, labour demand, wages and salaries, as well as production, data on the economic performance of a region must be derived from the enterprise data of the respective units.

The utilization of local units may lead to errors if their heterogeneity is not considered. For a better evaluation of the regional situation, it is therefore useful to consider the subdivision of the units into establishments. The ability of the enterprises and local units to provide information should, however, pretty soon reach its limits in the case of questions referring to facts concerning establishments. These difficulties are due to the fact that the activities are described by goods, whereas in the technical units of a local unit different goods may be produced. In this sense, the establishment is an artificial structure since it results from the combination of goods of the same kind. One and the same technical unit may thus simultaneously constitute different establishments. Bearing this in mind, it should be advisable to cover for establishments thus defined only some few data such as persons engaged, their wages and salaries, man-hours and production. It should be noted in this connection that in a number of cases these can be merely calculated values.

For cyclical analyses and investigations concerning the structures of enterprises, the kind-of-activity unit is the most suitable unit. However, it is, after all, also an artificial unit. Although the enterprises usually combine uniform products and manufacturing procedures into one organizational unit, it need not correspond to the definitions of activities as provided in a classification of economic activities. The more heterogeneous an enterprise, the more difficult it will be for this enterprise to provide data for kind-of-activity units. It will therefore be expedient to record only some few benchmark values, such as the turnover of a group of goods as well as the persons engaged and their wages and salaries. In the federal Republic of Germany, results for kind-of-activity units are obtained by means of estimation procedures except for production, turnover and persons engaged.

For investigating the production structure, it seems to be the obvious solution to divide the enterprises into units which, in turn, are subdivided into technical units and ancillary units. Since these units have clearly defined spheres of responsibility, there are detailed data available for their partial units - the cost sections - concerning the input of labour as a factor of production.

Reliable data should also be available on the production of the technical units. Production data are however lacking for the ancillary units. Nevertheless, it seems advisable to pay in future more attention to the ancillary units than had been the case in the past. Neglecting activities such as research and development, internal data processing of the enterprises, or training/further education, just to mention only some few examples from the list in Table 1, may lead to misinterpretations in the case of structural investigations, but also in the case of regional analyses.

Reliable information on technical units and ancillary units can be provided only by the enterprises. The willingness to provide information should, however, not be very great since such data are disclosing the interior life of the enterprises. It will therefore be expedient to cover only some few data, such as persons engaged and their wages and salaries.

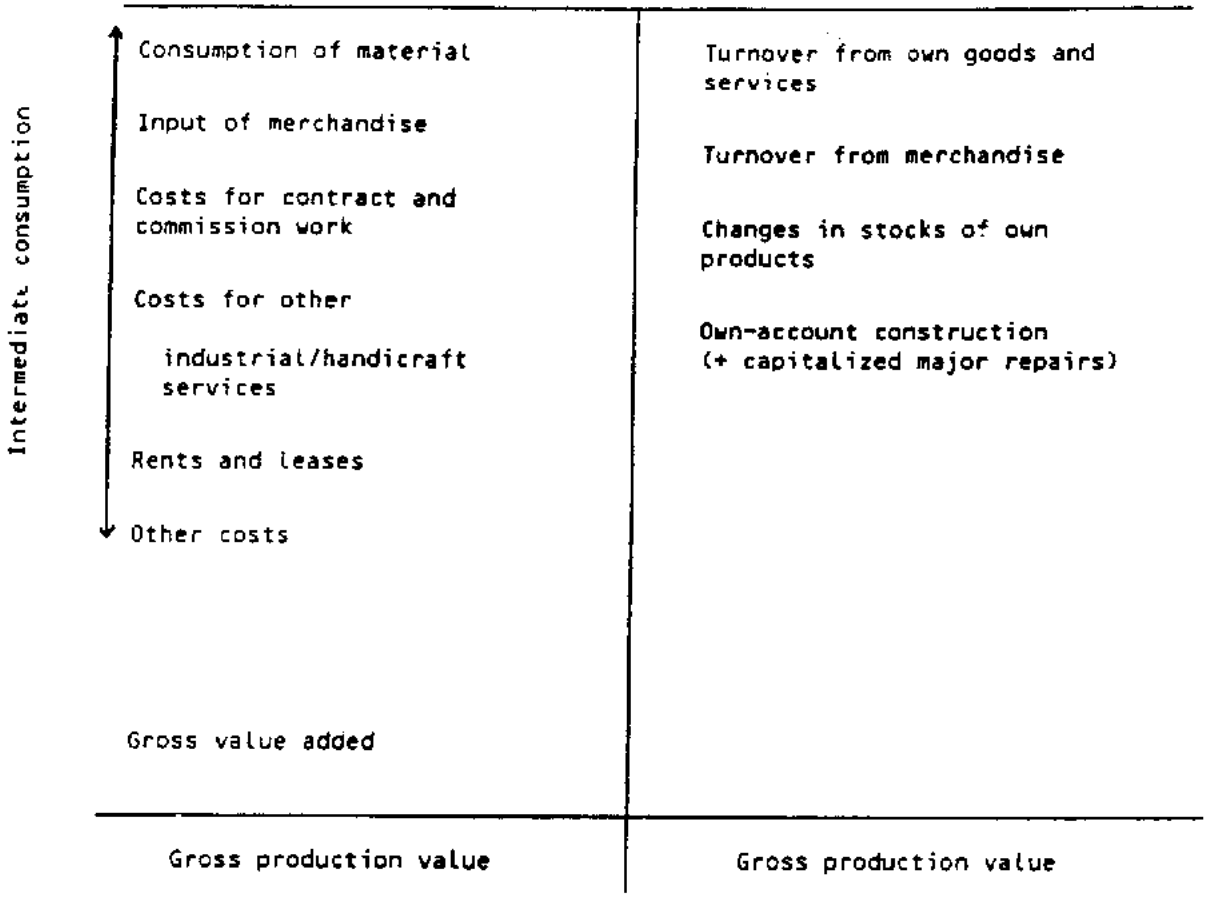
6. Conclusions

If the structures of individual industries, especially in the international sphere, are to be compared, it is indispensable to perform the analyses on the basis of the same units. The use of identical terms does not yet guarantee this prerequisite because in practice the term establishment may for instance also designate the enterprise, the local unit, or another statistical unit. It is therefore necessary to make mandatory provisions in the individual statistics not only for the economic activities to be covered, but also for the statistical units including their exact definitions. This is the only way to avoid that different facts are equated. In a survey of enterprises, the geographically separate computing centre of a bank for instance therefore must not be shown separately under data processing, even if the required data should be available. In such a case the data referring to the computing centre rather have to be completely integrated in the enterprise data.

The requirement of unambiguous terms does not mean that analyses will always have to be carried out on the basis of a single statistical unit; it rather is advisable to create a coordinated system of surveys and statistical units. Only such a system can meet the requirements of the various statistical questions and the possibilities for the individual units to provide information. Especially international economic analyses also show that it can be necessary to have various statistical units at the same time. Differences between identical sectors of the economy in the various countries may thus be due to the fact that the activities listed in Table 1 are performed to a differing extent by the individual enterprises. In such cases it is necessary to divide the enterprise into its parts and to cover the characteristics that can be shown for these parts. Considering the various statistical units, it could then be quite possible to compare, in each case separately, for instance employees of advertising departments of industrial enterprises and of advertising companies of country A with the same employees of country B.

Analyses dealing with the different growth of the service sector in the United States and the Federal Republic of Germany show that such investigations have not only a theoretical background. Another example are investigations concerning the economic performance of the Japanese automobile industry. They revealed among others that the automobile producers had shifted the stockkeeping to their suppliers. A simple analysis of output and input would not have been sufficient to find out about this fact because the input-output relations are after all independent of the time when the intermediate goods and services were received.

Enterprise account for deriving gross value added
excl. turnover tax [1)]



1) Value of production excl. the turnover tax charged; intermediate consumption excl. deductible turnover tax.

Combinations of the partial units of an enterprise

Fields of business activity 1) \ Local units	1 local unit	2 and more local units
1 field of business activity	Enterprise = local unit = kind-of-activity unit = establishment (Homogeneous single-unit enterprise)	Enterprise = kind-of-activity unit 2 and more local units = 2 and more establishments (Homogeneous multi-unit enterprise)
2 and more fields of business activity	Enterprise = local unit 2 and more kind-of-activity units = 2 and more establishments (Heterogeneous single-unit enterprise)	Enterprise 2 and more local units 2 and more kind-of-activity units 2 and more establishments The number of partial units may, but need not necessarily correspond. (Heterogeneous multi-unit enterprise)

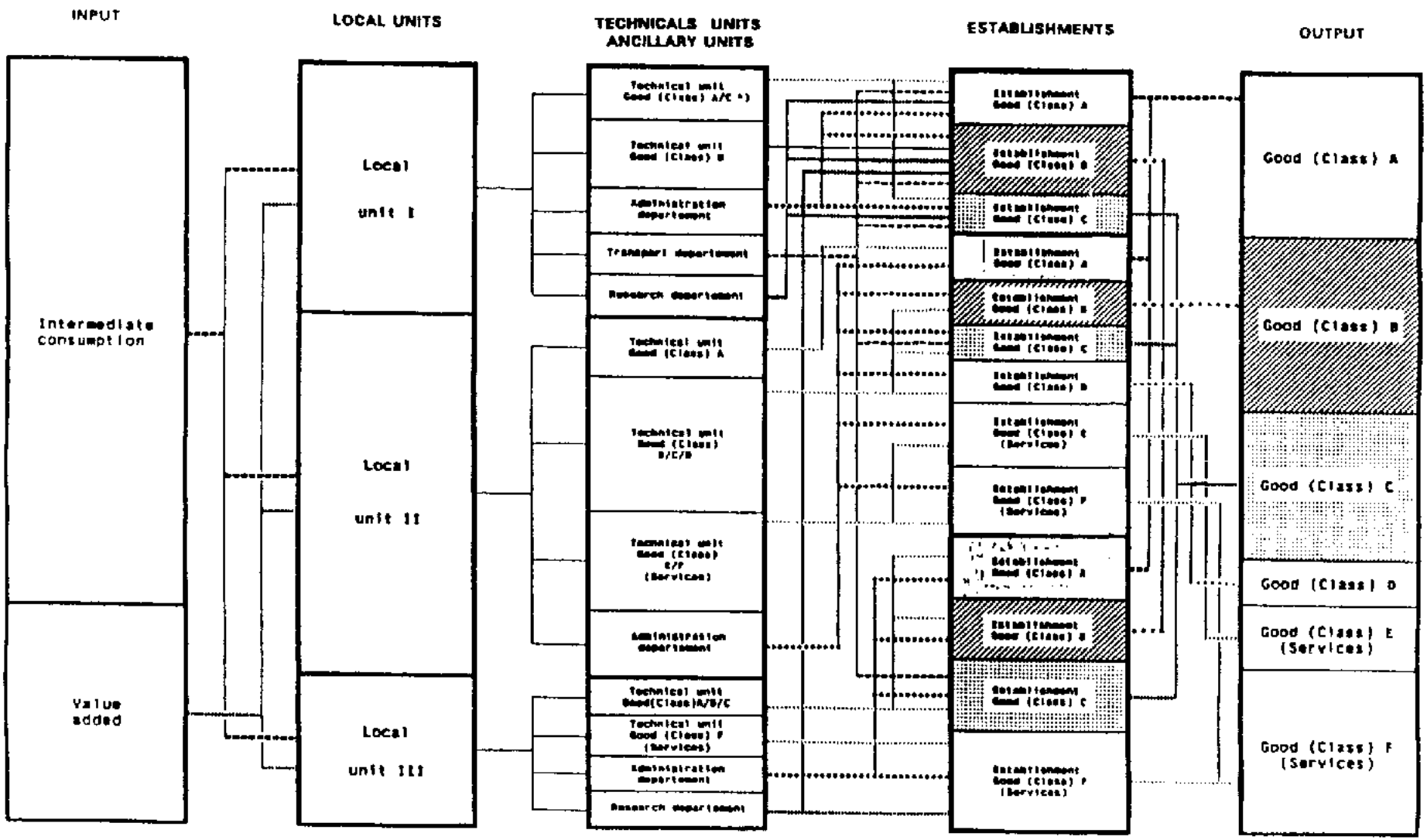
1) The fields of business activity are defined by economic activities.

Field of business activity	Local unit I	II	III	
A	X[1]	(X)[2]	X	
B	(X)	X	X	
C	X	X	(X)	6 kind-of-activity units
D		X		
E		X		
F		X	X	
Number of establishments	3	6	4	13

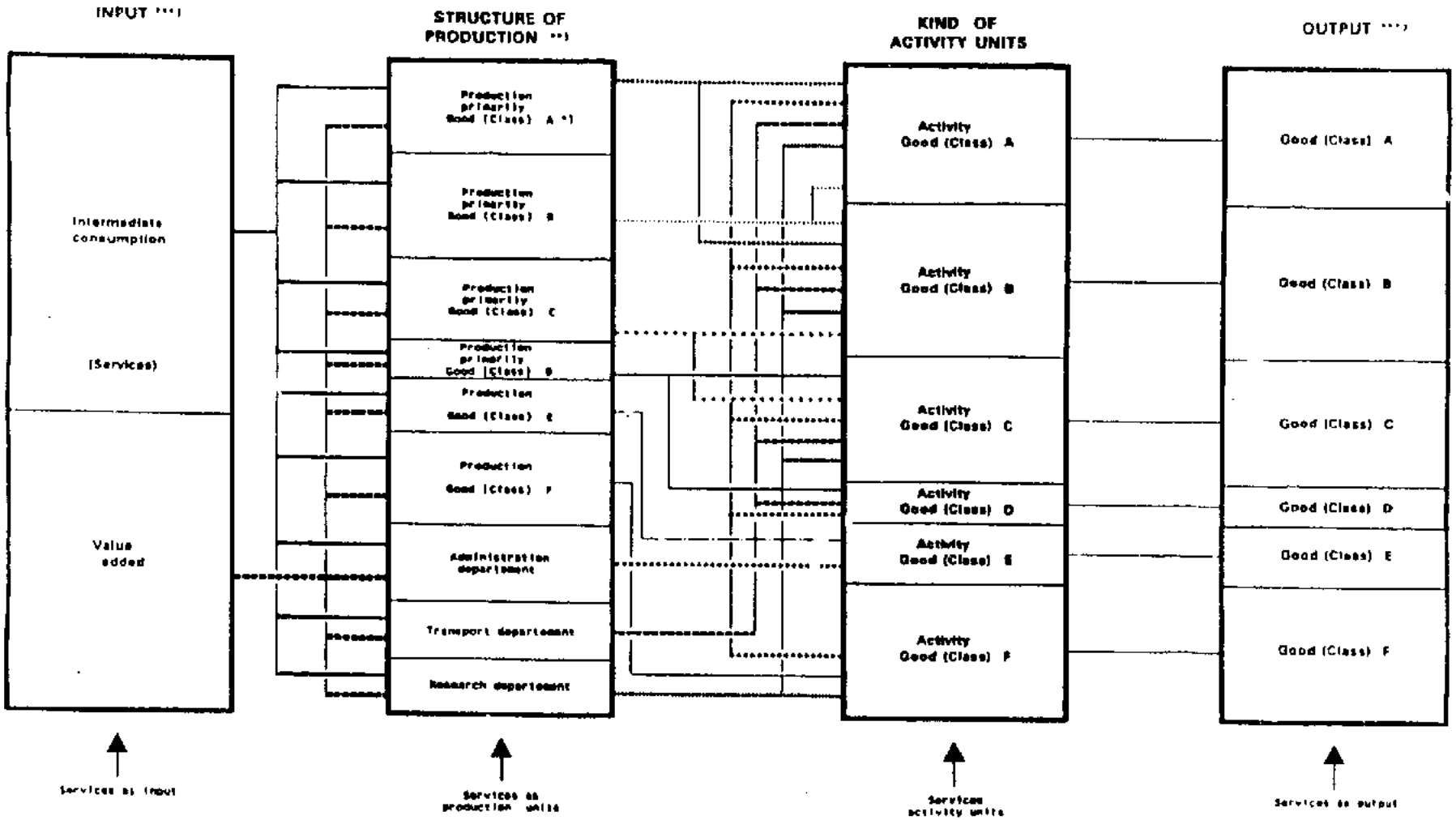
1) X : Establishment

2) (X) : Largest establishment of the respective local unit.

ORIGIN OF PRODUCTION



SERVICES IN THE STRUCTURE OF ENTERPRICES



*) Letters represent one good or a class of homogeneous goods.
**) Subdivided by local units.
***) Including goods and services for own-consumption.

Examples of activities that may occur in an enterprise as cost sections or legally autonomous as enterprises [1)]

Research and development

- Research and development
  - Research
  - Development
- Construction
  - Construction
  - Standardization
- Experiments, testing
  - Testing laboratories
  - Testing of materials
- Model construction and testing

Marketing

- Merchandising
  - Market research
  - Product information
  - Sales planning
  - Advertising
- Acquisition/sales
  - Field service
  - Branches
- Execution of orders
  - Order handling
  - Billing
- After-sales service

Administration

- Top Management
  - Management
  - Press office
- Personnel administration
  - Payroll accounting
  - Training/further education
- Financial affairs/accounting
  - Bookkeeping
  - Cost accounting
  - Financing
  - Evaluation and controlling
- Special administrative services
  - Law
  - Taxes
  - Organization
  - Auditing
  - Management planning
  - Data processing
  - Patents

Other activities

- Administration of real estate
- Transport
  - Lorries
  - Passenger cars
  - Trades
  - Petrol stations
- General plant services
  - Plant protection
  - Fire brigade
- Social services
  - Company doctor
  - Sports facilities
  - Canteen
  - Recreational facilities

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1) Extract from: BDI, "Empfehlungen zur Kosten- und Leistungsrechnung", Volume 1, 1980

Balance-sheet structure

A. Fixed assets:

I. Intangible assets;

II. Fixed tangible assets:

1. Land and buildings;
2. Machines, technical and other plants, plant and equipment;
3. Advance payments made, buildings and plants under construction;

III. Financial assets:

1. Investments;
2. Securities, loans and other financial assets; of which loans secured on real estate.

B. Current assets:

I. Inventories:

1. Raw materials and supplies;
2. Partly manufactured goods;
3. Finished goods and products;
4. Advance payments made;

II. Debts receivable and other assets:

1. Accounts receivable for goods and services;
2. Other receivables and assets;

III. Securities;

IV. Liquid assets.

C. Deferred expenses and accrued income

(3) Liabilities side

A. Capital ownership:

I. Subscribed capital;

II. Capital reserves;

III. Surplus reserves;

IV. Profit carried forward/loss carried forward;

V. Net profit for the year/net loss for the year.

B. Provisions

C. Liabilities:

1. Liabilities to banks;
2. Accounts payable for goods and services;
3. Liabilities from the acceptance of bills of exchange and from issuing promissory notes;
4. Other liabilities.

D. Deferred income and accrued expenses