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Conceptual framework: some thoughts on the definition of units, areas of study and accounting data. Paper prepared by Ph TROGAN.

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NB: IV and V are gone into in more detail in a paper on sectorial indicators

1 - Production units and "false friends"

Production units

The way in which production units are linked up in each country depends on legal traditions.

In France for example, a distinction is made between a "groupe", an "entreprise" and an "établissement".

A "groupe" is a power and decision-making structure which groups together all "entreprises" under it. The form of a "groupe" can be established by examining all its financial holdings in the various "entreprises". An "entreprise" can be dependent on several "groupes" but only one "groupe" can have majority control of it, either by virtue of having the greatest financial holding, i.e. more than 50% of the shares, or fewer, but sufficient for control, e.g. 30%; in extreme cases, a company can be controlled with 5% of the shares, depending on the distribution of shares between large and small shareholders. It is particularly difficult to monitor "groupe" statistics because of the form of a "groupe" changes depending on the acquisition of holdings.

There are four types of groups:

- Independent units, for example a hairdresser, which constitutes an "établissement", "entreprise" and a "groupe" at the same time.

  "Groupes" formed for easier management by breaking down "entreprises" into subsidiaries. These may be small "groupes" constituted for tax reasons, or an "entreprise" may also be formed for each special field to facilitate management, as is often the case in data processing.

Here, the various "entreprises" are 100% subsidiaries of the "groupe"; this type of "groupe" is virtually an "entreprise" but can change as time passes via acquisition of holdings in other "entreprises".

- Genuine economic "groupes" with strategies geared to control of or cooperation with others (horizontal or vertical integration) which they implement by acquiring minority or majority holdings. The profiles of these groups are relatively stable as they are determined by economic logic.

- Genuine financial "groupes". The profiles of these "groupes" fluctuate dramatically as they are determined by purely financial logic with holdings being acquired or disposed of as the opportunity arises.

In the last three types there is generally a holding "entreprise" which manages holdings and defines the "groupe" strategy.

An "entreprise" is defined as followed in the NACE:

ENTREPRISE: a legally defined organisation with a separate balance sheet under the supervision of a natural or legal person and formed to produce one or more goods or services at one or more locations.

The "entreprise" is thus independent (although only theoretically, if it belongs to a "groupe"), has legal, financial and accounting autonomy, keeps separate balance sheets and is liable to tax. In France "entreprises" are classified using a 9-digit code (SIRENE code). The "entreprise" constitutes the "smallest legal unit".

The "smallest local unit" offers a more detailed breakdown and is defined as follows in the NACE :

LOCAL UNIT: strictly speaking, a production unit (workshop factory, shop, office, mine, depot) situated in a place which is topographically isolated and in which one or more persons work on behalf of the same "entreprise".

In France this local unit is called an "établissement", a local geographic unit, legally dependent on a single "entreprise" and not autonomous in legal, financial or accounting terms. In France "établissements" are classified using a 14 digit code (SIRENE code) the first 9 digits of which are from the "entreprise".

It is thus easy to work from an "établissement" to its "entreprise", or vice versa, without any risk of omission or doubling counting. The same does not apply when working from an "entreprise" to a "groupe".

Finally, a new type of unit is now developing not based on control of financial holdings but on partnerships. These are networks "meshing" with each other. This is particularly true of franchises. The networks may also embrace various activities, i.e. in the case of the "big eight", made up of "entreprises" (either belonging to the same or different "groupes") with various specialised activivities in the fields of organization, data processing, legal advice and auditing from different countries. This type of unit can take any form: independent "entreprise", national "groupe", international "groupe", etc. and the profiles are extremely unstable, particularly as a partner in a medium-sized network will not rest until he has left it to become part of a large network. This type of unit cannot be observed by conventional statistics but only via monographs (which very rapidly become obsolete).

The selection of the units to be observed obviously depends on the field of study.

For analysing economic or financial strategy at national, European or international level, it would be best to study "groupes" and, if possible, networks.

For analysing employment or regional phenomena the smallest local unit is the most suitable.

Finally, for studies on production, which are of interest to this working party, the statistics on "entreprisees" are best. They have the advantage over the "groupe" statistics of not risking omission or double counting. They offer more material than the statistics on "établissements" (smallest local unit) as they allow complete accounting analysis and provide a great deal of data on employment. The statistics on "entreprises" are soundest but offer relatively little material for certain types of analysis and must be supplemented by other types.

"False friends"

The Anglo-Saxon term "enterprise" has a meaning which varies according to the country in which it is used:

- It can designate a "Parent company" having majority power on legal units ("entreprise" in the French sense); so Philips will be referred to as an "enterprise", which has not the same meaning as the French "entreprise";

- It can designate the smallest legal unit, i.e. "entreprise" in the French sense.

Likewise the French term "établissement" (smallest local unit) and the Anglo-Saxon term "establishment" have not the same meaning. The Anglo-Saxon "establishment", which is used more in "Industrial" rather than in "Services" statistics has in fact a meaning close to the French "entreprise" (smallest legal unit)

Sector

Each sector groups together with the same principal activity, the level of which can be described using different degrees of detail.

The smallest unit with a complete system is generally used for accounts data. This is the "enterprise" sector in France and the "establishment" sector in the United Kingdom.

For employment data, which are of a different type, use is made of the smallest local unit which has information on the numbers employed, i.e. the unit which effectively pays wages and salaries; this is the "établissement" sector in France.

However, if a direct comparison between employment data and accounts data is required, it is better to use the French "entreprise" sector.

Sector data classify units according to their principal activity but do not generally distinguish between data on the principal activity or on any secondary activities and therefor make it impossible to draw up statistics directly on the product or the branch. However, it is often the case in services that units are small, very specialized and only produce one product.

It shall nevertheless be noted that the sector of the "Smallest local unit" is much closer to the branch than the "entreprise" (French sense) sector, because, in terms of amounts, local units inevitably have a degree of specialization which is equal or superior to the "entreprise", which is nothing more than the aggregation of the local units. However, account statistics cannot be obtained systematically from local units because:-

- they do not have complete account systems;

- some invoice their clients (e.g. retail "établissements", whereas others do not invoice and have links only with the "entreprise";

- some local units only manage staff or, as is more often the case, means of production for the account of their "entreprise";

- as is in the previous example, some local units only carry out "ancillary activities" (such as administration and general services) for the account of the "entreprise" which, by their very nature, are not invoiced and are therefore not present in conventional accounts analysis.

It is best to use the "entreprise" sector for accounts analysis purposes. However, as with all approaches which use the sector of principal activity, it has one disadvantage for analysing time series, namely that each unit is classified only under one principal activity.

This activity may vary with time as in the case of "entreprises" whose work borders on two activities. Statistical methods can compensate for this by introducing stability criteria so that the units do not keep passing from one principal activity to another. However, there are some true changes of activity which should be taken into account. This can affect the time analysis of series in the case of large units since one sector expands to the detriment of another. When analysing series, it is therefore important to distinguish between cases of intersectoral reclassification and real changes in the sector.

This difficulty could be avoided by using a supplementary analysis by branch or product.

Branch

A branch groups together all homogeneous production units which produce the same goods or services. These goods or services may only be produced by the corresponding branch for which it constitutes the sole production activity.

Production units ("entreprises") mostly have mixed or juxtaposed activities. They carry out a principal activity, secondary activities - such as activities linked with other branches - and ancillary activities such as administration, purchasing, marketing, storage, distribution, etc. If a production unit has a principal activity and one or more secondary activities, it has to be broken down into homogeneous production units and the secondary activities are classified under other nomenclature headings than the principal activity. On the other hand the ancillary activities of a production unit are not dissociated from the principal activities or secondary activities with which they are linked.

These ancillary activities integrated into the production of various branches can only be linked with services (production of goods is never considered as an ancillary activity) and must be exclusively intended for the benefit of the production unit. Ancillary activities comprise production of management services on the unit's own account and are part of the normal functions of any production unit.

In the statistics on enterprises the study of a branch is a product analysis but as it is an accounts analysis, it comprises an analysis for invoiced products.

Product analysis makes it possible to conduct studies on market shares and does not have the disadvantages of sectoral analysis for time series. The time series per product are homogeneous even if the principal activities are subject to intersectoral reclassification.

The statistics on each product are collected by interviewing the (French) "entreprises" on the breakdown of their sales into products or by directly questioning the invoicing "local units". The total sales of a product are obtained by adding together the sales of the product for all sectors of principal activities. It is therefore important that the system is complete and that it covers the whole production system and not the industrial sectors alone.

Function

An analysis of principal activity by sector or by product allows only part of these services to be covered, namely those which are invoiced.

A service which is invoiced by an industrial "entreprise" or by a service "entreprise" is taken into account in the analysis by product, unlike "non invoiced services" (which are services internal to an "entreprise") and which are referred to as ancillary activities. They are particularly important for services rendered to "entreprises".

The relative importance of invoiced and ancillary services varies considerably, depending on activity and country (regulation, tax, the firm's own attitude).

It is thus misleading to compare the importance of "invoiced services" in isolation from one country to another.

In the same way, international comparisons of value added in one sector will be misleading if services are "externalized" in one country, i.e. if they are invoiced and do not form part of value added, and "internalized" in another, i.e. if they do form part of value added.

However, distribution between invoiced and non invoiced services can vary in time and depending on the services rendered. Following restructuring of groups of "entreprises", e.g. industrial, some ancillary activities (personnel management) are delegated to a single "entreprise". These ancillary activities which hitherto had been regarded as associated with production of industrial branches thus become an activity for an external account and are thus classified in the services branch.

All else being equal, there is no change in the value added, which is simply transferred from industry to services. On the other hand, an additional flow is generated, as henceforth, an activity for an external account is invoiced between the production branch (services) and the user branches (industry). This activity, which represents intermediate consumption for industry, thus increases the costs of services in industrial production.

For one and the same country the distribution between invoiced and non-invoiced services can vary in time and according to the services.

The term "function" is also used when communications, health, tourism, etc. are being studied. This constitutes a transectoral analysis in the sense that it cannot be based directly on the NACE structure, but nevertheless utilizes sectoral statistics. Communications are analysed via sectoral statistics taken from several large NACE groups (telecommunications, advertising, data processing services) which means that the organization of these statistics differs, with the two approaches complementing one another.

III - The spatial dimension: Regionalization

Logically enough, data regionalization is based on the smallest local unit.

As regards data on employment this is relatively simple as most of the statistics on employment are prepared directly at "local unit" level. However, the regional aspect of employment is not always relevant for certain studies. A salaried consultant engineer from an "établissement" in the Rhônes-Alpes region could well work full-time on a project in the Ile de France. Many jobs in services are based in Paris, but the projects cover the entire country.

This is all the more important in respect of data on production

- Only invoicing "local units" (outside of "entreprises") have turnover figures, e.g. retail "établissements".

- The turnover figures are not necessarily based on invoices to an "entreprise" or household in the same region (frequently the case in "design" activities).

- the invoicing "local units" which have figures on their own turnover do not generally know how high their expenses are and thus cannot determine their added value (e.g. retail shops where the purchases are made at "entreprise" level for all of the "local units".

Invoicing has regional relevance for "local" services in general, such as retailers, services rendered to households (laundries, hairdressers, cafés, restaurants, etc.) and, with a few minor differences, for the activities carried out by the liberal professions (doctors, laywers, architects, etc.), the banks' counter activities, etc.

But for other services often located in the capital for reasons of prestige, the regional dimension is irrelevant (consultancy, advertising). One might even go so far as to say that the national dimension is irrelevant too (cf. the big eight).

Regional statistics can be prepared directly at "entreprise" level (with the advantage of having a complete accounting system) for "local" services when the principal activity is conducted by "entreprises" with a single "local unit" or other "entreprises" from a single region. This is the case for hairdressers, the liberal professions, cafés, etc. but not necessarily for temporary work, banks and a good deal of retailing.

The "local units" could thus be interviewed as to their invoicing practices: temporary work, retailing, etc. as this is relevant at regional level. This might then be supplemented by surveying the "local units" belonging to an "entreprise" with multiple and multiregional "établissements".

However, for a number of activities the accounts survey approach is not relevant (consultancy, advertising, etc.); a more qualitative type of survey is required: what is the nature of the "établissement", does it invoice or not and what is its function within the "entreprise"?

Clearly, the regional dimension cannot be tackled by a single method and the right system - which may differ from country to country depending on legislation - must be determined for each activity.

Regional statistics can be assessed on the basis of national statistics (e.g. value added by sector) and a distribution key (e.g. regional distribution of employment).

IV - Accounting variables to be observed

The main accounting data are included in a summary generation of income account.

Merchandise purchased	Turnover
Change in stocks (initial stock - final stock)	
Consumables purchased	
Change in stocks (initial stock - final stock)	Production for stock (final stock - initial stock)
Other purchasers and external charges	Production for fixed assets
Balance: value added	
Taxes and duties	Value added
Staff costs	Production subsidies
To depreciation	
To reserves	
Financial charges	Financial product
Balance: profit or	Loss

There are four types of data:

- turnover which represents the volume of sales
- intermediate consumption, which is the sum of purchases of merchandise and consumable materials and other external charges
- change in stocks (a distinction may be made between producer stocks and user stocks)
- value added, which is defined as follows:

  turnover and production for fixed assets
  + changes in stock
  - intermediate consumption

Turnover or volume of sales is the easiest concept to use. However, turnover is of limited significance and it should also be noted that national accounts experts prefer the idea of output to that of turnover, working from sales to production.

Turnover is the only way of obtaining a breakdown into products and is therefore an essential data source. Turnover can have a direction (from the point of view of use), e.g. retail turnover stock. However, turnover is not always representative of the level of activity in an "entreprise" or a sector; in certain sectors, it can vary considerably (on a scale of one to ten) depending on the type of contract or the method of invoicing or recording. This is the case in engineering consultancy (with or without turnkey delivery) and in advertising (with or without direct invoice for the advertising copy etc.). It is not possible to compare two sectors, or even two "entreprises" from the same sector, by simply looking at the turnover.

Comparisons of this type can be made with value added, which is also a form of data that can be aggregated, the sum of values added being equal to gross national product.

In "entreprise" statistics the margin is a useful form of data between turnover and value added for measuring the level of activity in each "entreprise" or sector. The margin is calculated as follows:

turnover and production for fixed assets
+ changes in stocks
- purchases for resale of goods and services
- subcontracts, retroceded benefits.

(The purchase of services for resale is taken to mean the purchase of the "right to use" services.)

The margin can also be defined as the sum of value added and general costs.

The margin has the advantage of including services, whether they are "externalized" (i.e. they form part of general costs) or "internalized" (i.e. non invoiced ancillary services which form part of value added), which facilitates comparisons between sectors or countries.

For a study of tertiary activities, experts need to establish which data can be used to conduct a meaningful comparison of the different sectors.

It is clear that turnover does not meet this requirement. The turnover of a trader cannot be compared to the turnover of a person providing services pure and simple.

However, this can done with the margin, provided that the content of "purchases for resale" is determined for each activity. The same goes for subcontracting.

In "entreprise" statistics, credit institutions and insurance "entreprises" have production flows which are completely different from those of other service sectors.

Without going into detail, an initial approximation for the margin would be "interest received - interest paid" (for a bank) and "premiums received - claims met" (for an insurance "entreprise").

In a paper presented on 9 March 1988, M. J. Walton proposes the following production concept for insurance companies:

Production account
Premiums due
- less Premiums ceded to reinsurers
- less Claims (Indemnities) paid
- plus Claims on reinsurers
- less Additions to reserves (on account of outstanding risks and claims in the course of settlement)

This corresponds effectively to the margin concept and is largely comparable to the margin of a trader or an advertising agency.

One can then decide whether the commissions to agents should be treated as subcontracts and as part of production or not.

Margins or value added can thus be used to calculate meaningful figures enabling the results for sectors or countries to be compared.

V - Data on employment

There is great deal of data on unemployment which falls into the following categories:

- gross statistics on employment based on the smallest local unit
- gross sectoral statistics on "entreprises" based on the smallest legal unit
- national accounts statistics.

The main data to be collected are as follows (cf. DG XV/A5 Annex 5 : "Econonomic indicators for credit institutions").

Employment

Number of persons employed:

- by sex
- by status (wage and salry-earning, free-lance, non-salaried, temporary staff); for a predetermined period
- type of employment (full-time, part-time)
- by nationality (resident, non-resident)
- by qualification or training
- by type of employment: supervisory staff, management, day-to-day administration; technical; direct selling
- by place of employment (main "établissement", subsidiary or branch, at customer).

Volume of hours work
Wages and salaries
Social contributions.

The above statistics are available in fairly general form, not from a single source or even several sources but based on the same unit and thus homogeneous.

a) Statistics on employment based on the smallest local unit.

There are two types of source:

- Population censuses which are unique in that data are collected directly at individual level, without omissions or double counting (a person with two employment contracts will only be counted once). The censuses constitute an extremely valuable source of data on the non-salaried population (self-employed, employers, family helps) and wage and salary earners and provide a number of other data: status, sex, age, social/professional category, all of which can be cross-referenced with the type of employing "établissement". The intervals between censuses vary from 6 to 9 years. They constitute a major reference source.

- There are many other sources of data on employment based on the "établissement". Some, with a very low sampling rate, allow the results of censuses (e.g. employment surveys in France) to be updated and others utilize mandatory declarations made by employing "établissements" (in France UNEDIC statistics, annual declarations of social data etc.) and others again are provided by statistical surveys. In general data are collected at the employing "établissement", so these are not statistics on individuals but on employment contracts, an extremely unstable indicator if the duration of the work is short (cleaning) or if employment is intermittent (film production, etc.). This can be adjusted for the number of hours worked are known as well. Some statistics include sex, social/professional category, and wages and salaries paid. These statistics can be regionalized on the basis of the "local unit".

b) Statistics on employment based on the "entreprise" generally have less information to offer than those based on "local units" and are taken from surveys on "entreprises". There is little or no information on age, sex, social/professional categories (as the information exists elsewhere). However, the great advantage of this source is that employment and accounting data are homogeneous and thus permit a significant comparison to be made of "entreprises", sectors, countries, turnover for number of persons employed, value added, investment etc. To ensure that these are true comparisons, not only the total number of wage and salary-earning and non-salaried jobs must be measured but also the volume: the average wage and salary-earning workforce rather than the workforce at any given time, perhaps expressed in terms of "equivalent full-time jobs"; the non-salaried workforce (generally unchanged), full-time and part-time staff (where do we draw the line between these two?) and for some sectors permanent and casual jobs (in the case of temporary work in films, etc.). A sound overall yardstick is the volume of hours worked by wage and salary earners over the year; the volume of hours worked by non-salaried staff is less reliable but can be used for approximate assessments.

c) National accounts employment series use multiple sources, are the most sophisticated and correlate best with the various aggregates from national accounts (value added by branch, investments, etc.).

The disadvantage is that they are, at their level of greatest detail, only prepared for an input-output table, i.e. to a fairly aggregated level. However, they can be used as a bench mark.

These data themselves are, in general, based on population censuses and corrected for the effective duration of work to facilitate productivity assessment.

- Chart 2 -

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.