

## Chapter 2 - Statistical Surveys on Enterprise Production

The data needed to calculate the industrial production index are collected from enterprises by means of statistical surveys: the monthly branch surveys (EMB), which provide the data needed to calculate the index each month, and the annual production survey (EAP), which serves as the sampling frame for the EMBs and also provides the weights of the IPI at the most detailed level. In other words, the general principle is the combination of a light-touch monthly cyclical survey and a more detailed and exhaustive annual structural survey.

Many actors are involved in the process of collecting these surveys:

- INSEE is the main body responsible for collecting data from enterprises in the industrial sector excluding food and agriculture. In addition to collecting the data, it is also responsible for their analysis and integration (see Chapter 8) prior to the calculation of the IPI. INSEE delegates some monthly branch surveys to approved professional bodies (in French, *organismes professionnels agréés*, or OPAs) ;
- The Statistics and Forecasting Service (SSP), attached to the Ministry of Agriculture, is responsible for all surveys relating to food and agriculture. Like INSEE, it oversees both direct surveys and surveys delegated to OPAs. It then transmits the data on food and agriculture to INSEE;
- The Statistical Data and Studies Service (SDES), attached to the Ministry for the Ecological and Inclusive Transition, is responsible for all monthly surveys relating to energy. The aggregated data are also transmitted to INSEE. Lastly, with respect to construction, the SDES is responsible for overseeing two monthly surveys on activities in metropolitan France in buildings and civil engineering works, with the former being delegated to the French Building Federation (FFB) and the latter to the National Federation of Public Works (FNTP)<sup>13</sup>.

Production surveys are governed by European regulations:

- The PRODCOM regulation (Council Regulation (EEC) No 3924/91 of 19 December 1991) defines the obligations of Member States in respect of European structural business statistics on industrial production. A classification of products known as the “PRODCOM List” has been developed based on the external trade nomenclature (Combined Nomenclature, or CN) but adapted to the specific needs of industrial statistics. The list is updated each year;
- The STS Regulation: Council Regulation (EC) No 1165/98 of 19 May 1998 as amended in 2009 and Commission Regulation (EC) No 1503/2006 of 28 September 2006 implementing and amending Council Regulation (EC) No 1165/98 concerning short-term statistics as regards definitions of variables, list of variables and frequency of data compilation define the obligations of Member States in respect of the production of short-term Community statistics.

### 1- The Annual Production Survey (*Enquête annuelle de production*, or EAP)

It has three main goals:

- To identify the different activities carried out by enterprises in the industrial sector *via* a breakdown of their turnover into subsectors (or branches) and to deduce their main activity (APE). In other words, the EAP contributes, within the framework of the ESANE system, to the process of compiling the annual structural business statistics. This objective is critically important since a correct sectoral classification of enterprises in INSEE’s sampling frames will ensure the quality of the sectoral statistics produced. The EAP also provides the information needed for making the sector/branch transition necessary for

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<sup>13</sup>DARES also provides data on temporary employment in construction.

compiling national accounts on industrial enterprises (for other sectors, this information is collected as part of the annual sectoral survey, or ESA);

- To provide the necessary information for producing detailed data on industrial production, both in order to meet the requirements of the European PRODCOM regulation and associated directives and to meet the demands of national users and, in particular, those of professional bodies;
- To provide the sampling frame for short-term statistics in industry excluding food and agriculture. The EAP ensures a detailed annual tracking of industrial products manufactured in France for the industrial production index (IPI) and the producer price indices (PPI). The survey is used as the sampling frame for the annual EMB sampling process (see below) and provides some of the information needed to calculate the weights of the elementary series.

The EAP was first conducted in 2009 and concerned data for 2008<sup>14</sup>. Approximately 40,000 legal units are surveyed, exhaustively above a given workforce and turnover threshold and randomly below that threshold.

## **1.1- The Scope of the EAP**

The scope of the EAP corresponds to the manufacturing activities of enterprises whose main activity is classified in sections B to E of NAF Rev.2:

- B Mining and quarrying;
- C Manufacturing
  - Except division 10: manufacture of food products
  - Except division 11: manufacture of beverages
  - Except division 12: manufacture of tobacco products
  - Except subclasses 1610A and 1610B (sawmilling, planing and the impregnation of wood), which are a matter for the SSP;
- D Electricity, gas, steam and air conditioning supply;
- E Water supply; sewerage, waste management and remediation activities.

Approximately 150,000 enterprises (in the sense of legal units; see glossary) are included in this field.

Non-industrial enterprises (in the sense of their main activity) with one or more significant industrial activities (approximately 1,000 units) are also included to complete the responses to PRODCOM. They are the subject of a shorter questionnaire.

## **1.2- The Concept of Industrial Production**

In PRODCOM, the main concept used is the notion of production sold during the survey period (calendar year) in terms of value and physical quantities.

The concept of “industrial production” covers relatively complex concepts and is not referred to directly in the questionnaire, with the questions focusing on the sale of industrial products, which is more easily measurable, rather than on production itself.

The information required from each enterprise surveyed focuses on the products sold by the enterprise and on how the enterprise obtained those products: did it purchase them, have them manufactured or manufacture them itself, etc.? Depending on the case, the operations are linked to the production of goods or the production of industrial services. Industrial output is more difficult to define in activities related to gas and electricity and water and waste treatment.

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<sup>14</sup>The EAP replaced the Annual Survey on Enterprises in Industry (in French, *Enquête annuelle d'entreprise dans l'industrie*, or EAE), the Survey on Small Industrial Enterprises (*enquête sur les petites entreprises industrielles*, or EPEI) and the Annual Branch Survey (*Enquête annuelle de branche*, or EAB).

### **1.3- Content of the Questionnaire**

A first set of contextual data relate to the turnover of the legal unit over the calendar year. If the enterprise has a different financial year, the declaration will not reflect the turnover reported in the accounts.

#### **Distribution of Total Turnover**

Turnover is divided into five items:

- the sale of industrial products, covering all products produced by the manufacturing and mining industries as defined in the relevant classifications. These are mainly goods, but may also include industrial services, particularly in cases where total or partial production relates to inputs belonging to the customer (invoicing of a service);
- the installation of industrial products is surveyed separately from the manufacture of products, in accordance with the relevant classifications;
- the repair and maintenance of industrial products is also surveyed separately from the manufacture of products, again in accordance with the relevant classifications. Thus, for example, the sale of a product accompanied by a maintenance contract should give rise to two declarations, one relating to the sale of the product and the other relating to repair and maintenance;
- other sales of industrial products, covering all products from industry not classified in manufacturing and products from mining and quarrying, namely electricity, gas, steam and air conditioning supply and water supply; sewerage, waste management and remediation activities;
- the sale of non-industrial products and services corresponds to the remaining turnover that does not fall into the four previous categories. These correspond to marginal or secondary activities carried out by industrial legal units.

Some of these items are then described in detail. For example, sales of industrial products are described by aggregate and detailed products. The legal unit must indicate the total amount invoiced per product and the percentage distribution of each of these amounts based on the economic model underlying the sale of the product (see below). Lastly, for each product, when it makes sense to do so, the legal unit indicates the quantity of product sold, which must correspond exactly to the invoice amount shown on the same line of the questionnaire.

### **1.4- Breakdown of Invoicing According to the Economic Model for the Sale of Industrial Products**

The invoicing for a product corresponds to all the invoices issued for that product between 1 January and 31 December. This amount must be exclusive of taxes and transport costs, which are invoiced separately.

The analysis of the turnover of each product sold is based on the declaration of different possible economic models. Five economic models are used. Models M1 and M2 refer to products sold by the legal unit but manufactured externally by a third party (which may be another legal unit within the group), regardless of the geographical location of that third party. The other three models (M3, M4 and M5) relate to products manufactured by the legal unit on French soil, including French overseas departments. A product manufactured outside the national territory is invariably treated as having been manufactured by an external legal unit.

Manufacturing outside the legal unit, including in another legal unit of the same group

Model 1 (M1): the product sold was purchased in the same condition as it was on the market, or its manufacture was entirely outsourced to a subcontractor, without having provided it with inputs, i.e. raw materials and other components used in its manufacture free of charge. Invoicing corresponds to a retail or sale price.

Model 2 (M2): the product has been entirely manufactured by a subcontractor by providing it with the inputs free of charge. Invoicing corresponds to a production cost of the product.

Production by the legal unit on French soil (including overseas departments)

Model 3 (M3): this model covers products specific to the legal unit and manufactured by the legal unit itself, including by assembling purchased components. Invoicing corresponds to a production cost of the product.

Model 4 (M4): manufacture of a product for a third party that has designed it or holds the rights to it, without free supply by that customer of the raw materials and other components used in the manufacture. Invoicing corresponds to a production cost of the product.

Model 5 (M5): the legal unit manufactures the product for a third party, with the latter supplying inputs free of charge. This case also corresponds to any partial manufacturing operation for a third party, such as the processing carried out on a part supplied by the customer. Invoicing corresponds to a service price.

The measurement of production is based on aggregates (M2) to (M5).

## **2- Monthly Branch Surveys (*Enquêtes mensuelles de branches, or EMB*)**

The industrial production index is compiled based on the monthly branch surveys (EMBs). In the current system, the EMB operates autonomously but the design (i.e. the choice of products surveyed) and sample selection are largely based on the EAP.

### **2.1- The Scope and Statistical Unit of the EMBs (*Excluding Food and Agriculture and Energy*)**

Enterprises (population concerned by the survey) included within the scope of the monthly branch surveys meet the following criteria:

- they are located in France;
- they operate in at least one industrial branch, whether as a core or secondary activity;
- they have more than 20 employees or generate more than €5 million in turnover in at least one of the branches listed in Table 1 (excluding food and agriculture and energy<sup>15</sup>, the data on the latter fields being collected by the Statistics and Forecasting Service (SSP), attached to the Ministry of Agriculture, and the Statistical Data and Studies Service (SDES), attached to the Ministry of Ecological and Social Transition, respectively).

The statistical unit surveyed is the unit resulting from the combination (or intersection) of an enterprise (in the sense of legal unit; see glossary) and a product. The products studied are derived from those analysed in the EAP.

Table 1: List of Branches Included within the Scope of the Monthly Branch Surveys (*Excluding Surveys on Food and Agriculture and Energy*):

- “Mining and quarrying” (Section B)

NAF 08.11Z	Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate
NAF 08.12Z	Operation of gravel and sand pits; mining of clays and kaolin
NAF 08.93Z	Extraction of salt
NAF 08.99Z	Other mining and quarrying n.e.c.

- “Manufacturing” (Section C)<sup>16</sup>

<sup>15</sup>The scope of the IPI is therefore broader than the scope of the EMBs managed by INSEE since, for some branches, the index draws on other surveys or sources.

<sup>16</sup>Some NAFs are not monitored in the EMBs, mainly because production is low or non-existent in France or because monitoring is not required under European regulations (see Chapter 3).

- Division 13 Manufacture of textiles  
*except for NAF*  
*13.94Z Manufacture of cordage, rope, twine and netting*
- Division 14 Manufacturing of wearing apparel  
*except for NAF*  
*14.11Z Manufacture of leather clothes*  
*14.20Z Manufacture of articles of fur*
- Division 15 Manufacture of leather and related products
- Division 16 Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials  
*except for NAF*  
*16.10A Sawmilling and planing of wood, excluding impregnation*  
*16.10B 'Impregnation of wood'*  
*16.22Z Manufacture of assembled parquet floors*
- Division 17 Manufacture of paper and paper products
- NAF 18.12Z Other printing
- NAF 18.13Z Pre-press and pre-media services
- Division 20 Manufacture of chemicals and chemical products
- Division 21 Manufacture of basic pharmaceutical products and pharmaceutical preparations
- Division 22 Manufacture of rubber and plastic products
- Division 23 Manufacture of other non-metallic mineral products  
*except for NAF*  
*23.43Z Manufacture of ceramic insulators and insulating fittings*  
*23.44Z Manufacture of other technical ceramic products*  
*23.49Z Manufacture of other ceramic products*  
*23.52Z Manufacture of lime and plaster*  
*23.64Z Manufacture of mortars*  
*23.65Z Manufacture of fibre cement*  
*23.69Z Manufacture of other articles of concrete, plaster and cement*  
*23.70Z Cutting, shaping and finishing of stone*
- Division 24 Manufacture of basic metals
- Division 25 Manufacture of fabricated metal products, except for machinery and equipment
- Division 26 Manufacture of computer, electronic and optical products  
*except for NAF*  
*26.80Z Manufacture of magnetic and optical media*
- Division 27 Manufacture of electrical equipment
- Division 28 Manufacture of machinery and equipment n.e.c.  
*except for NAF*  
*28.24Z Manufacture of power-driven hand tools*
- Division 29 Manufacture of motor vehicles, trailers and semi-trailers
- Division 30 Manufacture of other transport equipment  
*except for NAF*  
*30.40Z Manufacture of military fighting vehicles*  
*30.99Z Manufacture of other transport equipment n.e.c.*
- Division 31 Manufacture of furniture
- Division 32 Other manufacturing  
*except for NAF*  
*32.11Z Striking of coins*  
*32.20Z Manufacture of musical instruments*  
*32.40Z Manufacture of games and toys*  
*32.91Z Manufacture of brooms and brushes*
- Division 33 Repair and installation of machinery and equipment

*except for NAF*  
33.17Z *Repair and maintenance of other transport equipment*  
33.19Z *Repair of other equipment*

- “Water supply” (Section E)

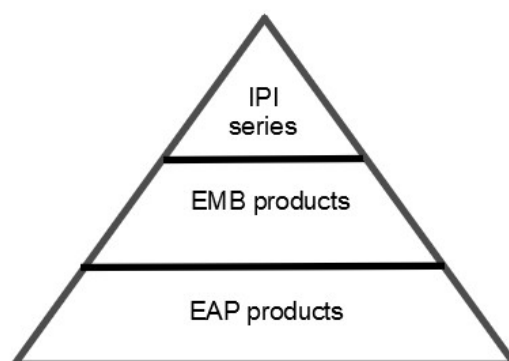
Division 36 Water collection, treatment and supply  
Division 37 Sewerage; sewage sludge  
(surveyed as part of the EMB survey but not yet included in the calculation of the IPI)

## **2.2- From the EAP to the EMBs: Definition of the Boundaries of Monitored Products and EMB Sampling**

EMB products (known as ‘ProdEMB’) represent an intermediate link between the very detailed list of EAP products and the level of detail of the IPI series:

- an IPI series can consist of one or more EMB products;
- an EMB product (ProdEMB) corresponds to one or more EAP products (ProdEAP);
- to define the chosen level of detail (the “boundaries” of the products monitored), a general rule is to track products with widely different business cycles separately.

Figure 1: Interlocking Logic Between Products and IPI Series



The links between IPI series, EAP products and EMB products are defined at the time of each IPI base year change or now as part of the annual re-basing of products (see Chapter 3). They are updated each year in line with changes in the EAP and/or EMB product lists to ensure the homogeneity of the products tracked by a series over time and thus the quality of the measured changes.

Once the list of product boundaries has been defined, a sample<sup>17</sup> is selected for each product monitored from a sampling frame based mainly on the result of the last EAP available at the time of sampling (year N-2). The sampling frame includes legal units that carry out an industrial activity and that meet a number of criteria:

- the scope criteria referred to in 2.1 (at least 20 employees and/or a turnover of more than EUR 5,000k in at least one industrial activity);
- in the event of a secondary manufacturing activity, this must represent a sufficient proportion of the enterprise’s total turnover;

<sup>17</sup>The sample for year N is selected in November N-1 and is fixed for the entire data collection year from January to December N.

- The sampling frame covers legal units that reported having sold products according to economic models 2 to 5 as part of the EAP<sup>18</sup>;
- the sampling unit is the intersection (product x legal unit). A legal unit may therefore be selected for several of the goods that it produces;

By design, the sample is drawn from the legal units having responded to the EAP and which are therefore already familiar with the economic and statistical concepts used in the survey (such as the concept of economic model).

The sampling procedures have changed somewhat in recent years. Different selection methods are used depending on the product:

- where the number of legal units for a given product is less than or equal to a given threshold  $S_1$  (generally 6 legal units), exhaustive sampling is used;
- if the number is between threshold  $S_1$  and threshold  $S_2$  (where threshold  $S_2$  is of the order of 150 to 200), a cut-off (70% in the case of direct surveys, 75% in the case of delegated surveys) is applied (see below),
- when the number is higher than  $S_2$ , a cut-off at 50% is applied followed by stratified sampling.

A number of other criteria have been introduced more recently, such as the need to improve the accuracy with which certain products of particular importance (given their economic weight) are tracked, resulting in a possible modification of the number of enterprises surveyed according to the size of the sector.

## 2.3- Direct and Delegated Surveys

Excluding food and agriculture, construction and energy, EMBs are overseen by two types of bodies:

- “direct” surveys are conducted by INSEE;
- “delegated” surveys are conducted by OPAs by decree as part of the conduct of the EMBs.

At the end of 2012, INSEE began a major process of standardising surveys for professional bodies. In 2013, 33 monthly branch surveys were delegated to OPAs while 162 surveys were conducted directly by INSEE. The number of surveys delegated to OPAs has dropped significantly since 2014. Surveys have been standardised in terms of methodology and questionnaire content. The standardisation process undertaken by INSEE was driven by the need to revise the IPI processing chain and to apply the framework provided by the [European Statistics Code of Practice](#). The aim was to refocus the content of delegated surveys on products and variables relevant to the IPI and thereby to minimise the burden on businesses and bring them into line with the principles established for the design of direct surveys.

In 2018, 6 OPAs were appointed by INSEE to conduct EMBs, representing 11 surveys in total.

Between 4,500 and 5,000 enterprises are surveyed each month, including 500 to 600 by means of “delegated” surveys. In the case of surveys conducted by OPAs, INSEE selects the sample and retrieves the detailed results or the individual data directly.

## 2.4- The Questionnaire

The EMB questionnaire is structured as follows:

- the first page is reserved for management and contains the statutory legal notices (including those implied by the delegation for standardised surveys managed by OPAs), the identification data relating to the legal unit and the survey correspondent;

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<sup>18</sup>Model 1, corresponding to a purely commercial function, is excluded.

- the body of the questionnaire contains the survey by products classified according to the classification in use. Each product is associated with one or more collection variables (e.g. quantities produced or invoicing excluding purchases for resale<sup>19</sup>, see Chapter 4).

In a small number of sectors, quantities or invoicing may be requested based on an additional breakdown criterion linked to the economic model (see Figure 2).

*Figure 2: EMB Questionnaire - Survey of Quantities Produced in Two Possible Forms*

→ by distinguishing the activity of purchasers (M2) from that of manufacturers (M5) (case limited to NAFs in Divisions 13 covering textiles and 14 covering clothing):

Quantité produite (M5)	Quantité produite (M3,M4)	Quantité produite (M2)
P06 : pièces	P08 : pièces	P38 : pièces

→ without further distinction (general case), this is the most widespread and simple form:

Quantité produite (M2 à M5)
P01 : tonnes

Direct EMB questionnaires are customised, meaning that each enterprise is only requested to respond on the control products included in the sample and not on its entire output. Each enterprise receives just one questionnaire, which may relate, however, to several branches of activity.

The questionnaires of delegated surveys are now almost all standardised. The products and variables and their design follow the same principles as direct survey questionnaires, with some differences:

- page 1 contains the legal notices related to delegation and the union logo instead of the INSEE logo;
- the questionnaires are not generally customised but have a fixed structure and enterprises may be required to respond on products for which they were included in the IPI sample and others that are not relevant to the calculation of the IPI. Only products of use to the IPI are handed over to INSEE by the OPAs.

The questionnaires may be revised each year to take into account changes in EU product classifications (PRODCOM), enterprise production or IPI methodological changes. In particular, some questions may be removed if they become less useful for the accuracy of the IPI or, conversely, new products may be added. However, the vast majority of products and variables are maintained from year to year.

<sup>19</sup>This ensures that any trading activities which by their very nature do not constitute a manufacturing activity are excluded from the index. In the questionnaires, the exclusion of purchases for resale is indicated by a reference to the economic models to be reported (see the reference to "M2 to M5"). Enterprises surveyed as part of the EAP are already familiar with the concept of economic model.