



# Compilation of turnover index for industrial production in Spain

## Workshop on Industrial Statistics for Countries in the ESCWA Region

Beirut, 11-13 December 2017

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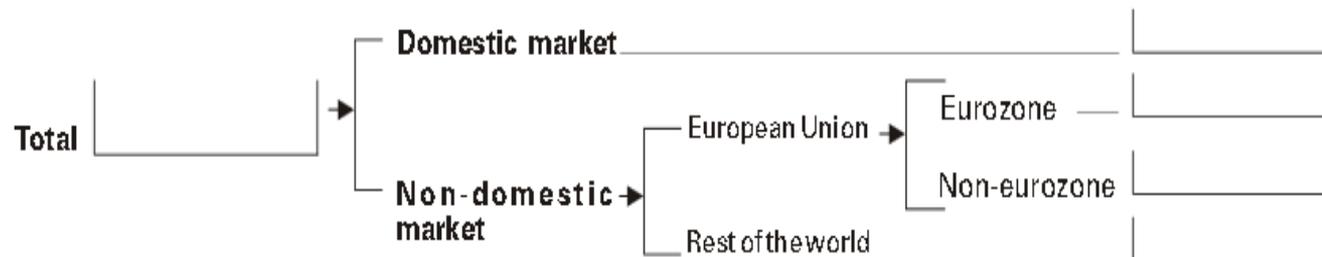


- The objective of the Industry Turnover Index is to measure the evolution of the turnover in the industry: “Mining and quarrying” and “Manufacturing” sectors.
- The statistical population are the establishments located in Spain whose main activity is included in Sections B: “Extractive industries” or C: “Manufacturing industry” of CNAE-2009 ([NACE Rev.2](#) → [ISIC](#)).
- The regional breakdown is very important: sampling, collection, dissemination.

• Questionnaire:  
data for the  
reference  
month.

**1. Value of the Business figures** (in euros without decimals, without including VAT or other taxes that levy the operation)

Net amount of the business figures. Indicate the total and itemize the amount according to its destination





- The sampling method is cut-off. The sample is obtained so that it covers at least 80% of the turnover in each stratum (NUTS2 \* division/subdivision of NACE-2009).
- The frames used are the Industrial Products Survey (PRODCOM) and the Structural Business Statistics: Industrial Sector (information of establishments' turnover by region and economic activity).
- A fixed base Laspeyres index is used.
- Base year are the years ending with a 0 or a 5. All indices must be rebased on the new base year within three years after the end of this new base year.
- The source of weights for ITI is the Structural Business Statistics: Industrial Sector. The estimates of the base year will be used to calculate the weights.



- The Industrial Products Survey (PRODCOM) is an annual statistical operation aimed at providing information about a group of approximately 5,000 industrial products covering the Spanish industrial sector. The collected variables are: manufactured product(s), the turnover generated by the product(s), validated identification information for each establishment of the company.
- The Structural Business Statistics: Industrial Sector is aimed at ascertain the structural and economic characteristics of the industrial sector companies. It collects information of the turnover broken-down by establishment.
- Annually [a list is obtained](#), with the units in Prodcom and in the SBS sample and not included in the ITI sample, together with their turnover and identification variables. New units are included in the ITI sample to reach 80% of total turnover in each stratum.



INE Spain carries out two STS-industry statistics: Index of Production in Industry (IPI) and Index of Turnover in Industry (ITI).

Although the initial sample was the same for IPI and ITI, obtained using a cut-off method, differences have arisen between the two, over time, due to different reasons, such as the case of establishments that stop manufacturing products included in the IPI basket.

Another difference are the units with industrial economic activity that are “factory less”. These units are to be included in the ITI sample but not in the IPI sample.

# Data collection modes



Data are required in the last week of the reference month. If a establishment doesn't send back the data in 10-15 days, then INE staff get in contact by mail or phone to recall the data. If no data is provided 2 months after the reference month, then the establishment may be fined.

INE  
regional  
offices

Paper  
questionnaire  
or mail

Paper  
questionnaire

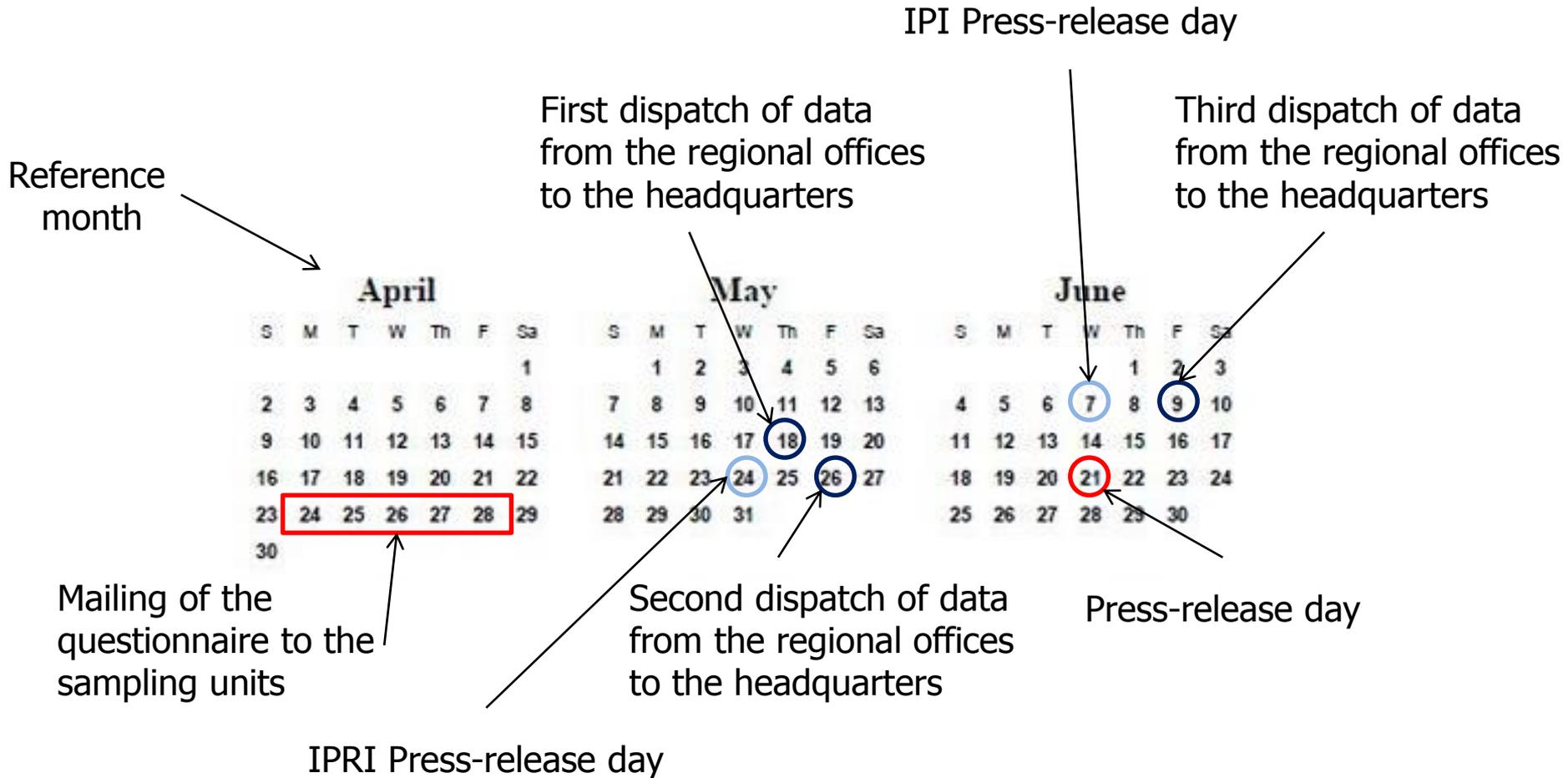
- By:
- Postal mail
  - Fax
  - Telephone
  - E-mail

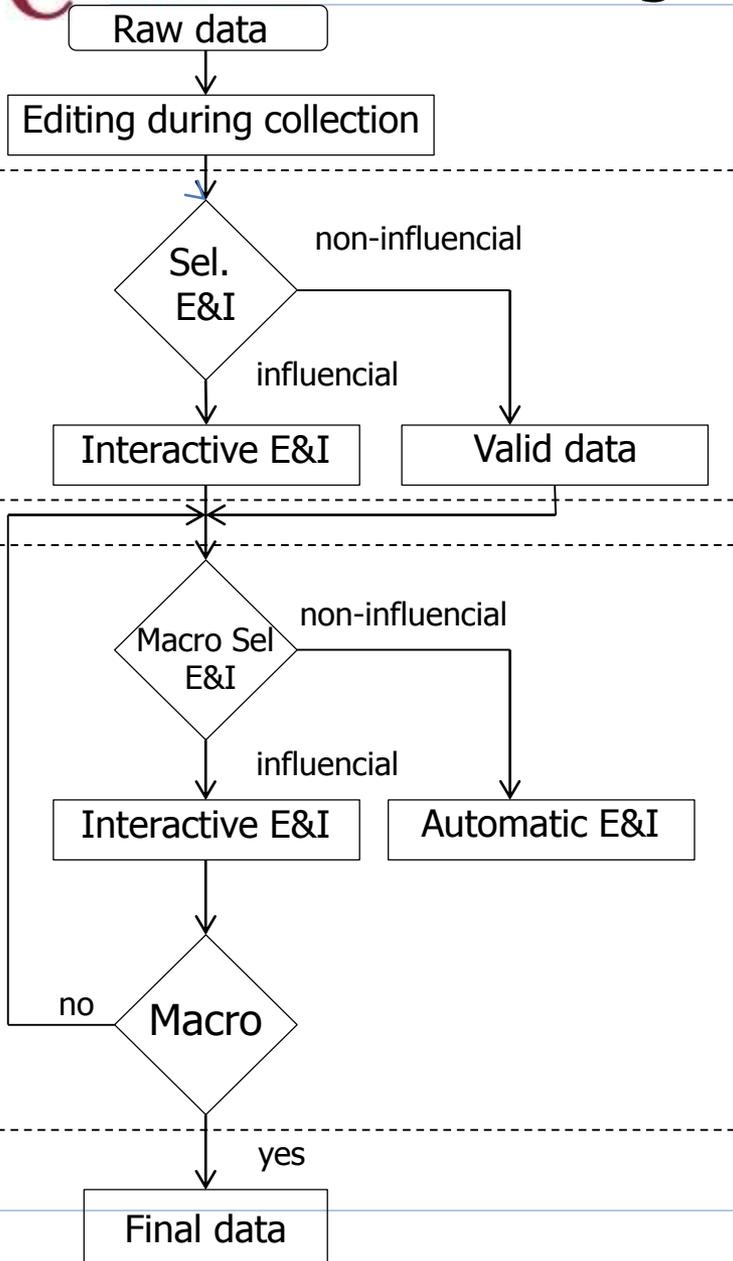
Establishment

e-Questionnaire

In 2016: 80% by e-Q,  
9% by e-mail, 6% by fax,  
3% by telephone and  
2% by postal mail

# Data collection dates





Longitudinal editing

Cross-sectional editing

The E&I strategy at INE Spain in ITI is the following:

- Editing during data collection: the e-questionnaire contains hard and soft edits;
- Interactive editing at the regional offices: including recontact with the respondents and editing of paper questionnaires;
- Macro editing at the central office: questionnaires flagged are again subjected to interactive editing.

Each stage comprises a set of check controls for the whole sample.

Interactive, selective and macro editing takes place during the two months of data collection.



Valor de la cifra de negocios y valor de los pedidos.

En euros sin decimales, sin incluir el IVA ni otros impuestos que gravan la operación

Instructions

No rage restrictions

**NOTA IMPORTANTE PARA LOS CUESTIONARIOS DE ÍNDICES DE CIFRAS DE NEGOCIOS Y DE ENTRADAS DE PEDIDOS**

Valor de la cifra de negocios **	Valor de la cartera de pedidos al principio del mes (1)	Valor de los nuevos pedidos recibidos en el mes (2) **	Valor de los pedidos cancelados en el mes (3)	Valor de los pedidos satisfechos en el mes (4)	Valor de la cartera de pedidos al final del mes (1)+(2)-(3)-(4)
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<input type="text"/>					
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Balance edit

\*\* Desglose de la cifra de negocios por destino de las ventas y de los nuevos pedidos recibidos en el mes según su procedencia:

	Mercado interior		Mercado exterior		Resto del mundo
	Zona Euro	Unión Europea	Zona NO Euro		
Valor de la cifra de negocios	<input type="text"/>				
Valor de los nuevos pedidos recibidos en el mes	<input type="text"/>				

Valor de la cifra de negocios \*\*

Falta la respuesta.

Missing data are not allowed

A questionnaire is flagged if:

- the total turnover for the reference month equals the total turnover of the preceding month;
- the total turnover is 0;
- the interval-distance control check is not fulfilled: for the **total turnover** value of each respondent a validation interval is assigned. If the distance (from reported value to the interval) is greater than certain threshold (that can be changed), the rule is not fulfilled.



Selective editing applies interactive editing to a well-chosen subset of the **records** (the **most influential**). This way limited time and resources available for interactive editing are allocated to those that have most effect on the quality of the final estimates.

In selective editing, a score is calculated for each record, expressing the relevance of the potential error(s) in the record. This score is used to prioritize units.

The selective editing is an editing method that perfectly adapts to the ITI: skewness of the Industrial companies, cut-off sampling.

In the **longitudinal** edits we use the longitudinal **information** for the total turnover of **each unit** in the sample to obtain a validation **interval** (using ARIMA predictions). We define a **distance** (which is a score function) and a **threshold** for the reference period  $t$ .

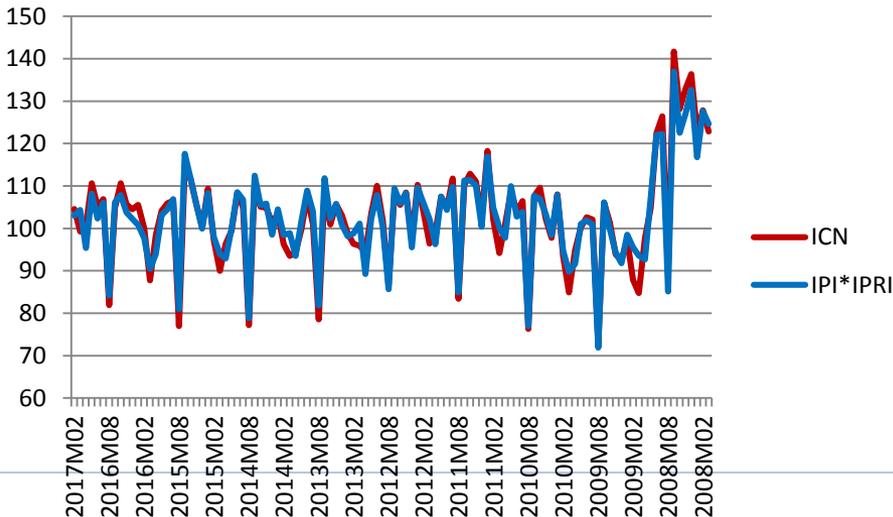
In the **cross-sectional** edits we use the data of the **reference month** of the **whole sample** to flag 100 questionnaires. A prediction value (obtained using regression) is compared with the reported value and the units are scored (and prioritized) according to a distance.



Monthly we obtain files containing the unit whose annual rate at microdata level are above 100% and under -70%. The data of these units are analysed with the time series of the previous months.

Some units do not provide the data of the reference month, but cumulated data of the months in the year.

We can also **compare** the **ITI microdata** with **IPI microdata**. And we compare ITI annual rates with IPI\*IPRI annual rates for the suspicious divisions.



**FOOD**

## Olive Oil Prices Are Going Through the Roof

Hoarding oil of a new kind after terrible harvests in Italy, Spain and Greece.

by **Agnieszka De Sousa** and **Richard Vines**  
9 de febrero de 2017 14:15 CET



**Elementary indices** are calculated according to the following formula:

$${}_{2010}I_{e,i}^{my} = \frac{\sum_j t_{j,i}^{my}}{\frac{\sum_{m=1}^{12} \sum_j t_{j,i}^{m2010}}{12}}$$

where  ${}_{2010}I_{e,i}^{my}$  is the elementary index,  $t_{j,i}^{my}$  is the turnover and  $\frac{\sum_{m=1}^{12} \sum_j t_{j,i}^{m2010}}{12}$  is the value of the average turnover in

base year 2010. This formula is used to obtain  ${}_{2010}I_{e,i}^{Jan10} = \frac{\sum_j t_{j,i}^{Jan10}}{\frac{\sum_{m=1}^{12} \sum_j t_{j,i}^{m2010}}{12}}$ .

In practice we have to consider the possibility of new establishments opening and others closing down, so in the computation of elementary indices we will use the data of establishments having provided **data for two consecutive months**:

$${}_{2010}I_{e,i}^{my} = {}_{2010}I_{e,i}^{m-1y} \cdot \frac{\sum_j t_{j,i}^{my}}{\sum_j t_{j,i}^{m-1y}}$$

Each unit in the sample has a **validation code** that is used to know whether this unit is to be taken into account in the computation:

- VC = 0: closed down or new units that have sent no data. Not included;
- VC = 1: the unit has provided data for two consecutive months. Included;
- VC = 2: the data series has been truncated (merge, absorption). Not included.



**Indices** in base year 2010 for any functional aggregation A (region, section, division, market) is obtained according to the formula:

$${}_{2010}I_A^{my} = \sum_{i \in A} {}_{2010}I_{e,j}^{my} \cdot {}_{2010}W_i^{CNAE09}$$

The weights are calculated using the formula:

$${}_{2010}W_i^{CNAE09} = \frac{\text{Turnover of the activities of elementary aggregate in base year 2010}}{\text{Total turnover of extractive \& manufacturing industries in base year 2010}}$$

We obtain weights for the following **breakdowns**:

- Division/subdivision \* NUTS2;
- Division/subdivision \* Markets.

The **source** of data is the Structural Business Statistics: Industrial Sector. With the microdata we will be able to calculate the necessary weights.



During a change of base the following actions have to be carried out:

- Additional sample revision;
- Analyse the new division(s) to be collected and the ones not to be collected any more;
- Calculate the weights and analyse the differences between ITI and SBS;
- Recalculate the index series from the beginning of the data series;
- Any methodological changes to be made? Include regional/market breakdown, start calculating seasonal and/or calendar adjusted series, change the classification/questionnaire, etc.;
- Update the web-site and the methodological reports;
- Advertise in advance the rebasing update.



In the [web site](#) the following information can be found:

- Monthly press-release: press-release and table annex;
- Monthly results in the corresponding base: indices, calendar adjusted indices, seasonally and calendar adjusted indices;
- Data series in other base years;
- Weights;
- Methodology and Metadata report.

[Customized reports](#) sent for free to the reporting units using the e-questionnaire and asking for it.

Customized reports with additional cost where the reporting unit can ask for information not included in the website or in the free customized reports .

**Confidentiality!!**



Any question??

