Situation of the Spanish industry Survey

At the moment the most important problem in the business survey in industry (BSI) we face in Spain is switching to the new classification of NACE. The BSI is running well and faithfully reflecting the current economic crisis. Moreover the survey by internet works satisfactorily although the number of companies engaged in this approach remains low.

For a better understanding of the situation it is necessary to begin describing briefly the way the BSI is elaborated in Spain.

The harmonised business survey in industry has been conducted in Spain since 1964 according to DGECFIN methodology.

The sample size in industry survey is about 2300 firms. During the last month we have been working in classifying the sample according to the new NACE. We faced problems with about 600 firms. It has been necessary to ask them again for their activity to identify the correct code number of the new NACE. This is one of the tasks we still are doing at the moment.

As it is well known, answers obtained from the survey are aggregated in the form of balances. Balances are built as the difference between the percentages of respondent giving positive and negative replies.

In this survey, unlike in quantitative ones, there is no problem in raising the results obtained from the sample to the total industrial enterprises, as might be the case for example, with a survey which aims to obtain the value of total industrial sales in a given period.

However, it is necessary to apply weights to the answers given by the companies in the sample. The goal is that the final data of the variables investigated are as representative as possible of all industrial enterprises in Spain, according to the existing production structure.

For the business surveys (industry, retail trade, construction, services and investment), survey results are broken down by branches according to the Classification of economic activities in the European Community (NACE), Rev. 1.1 at the two-digit level.

Starting from each stratum, the percentages of answers to each reply option are calculated. Two alternatives are available at this stage: a simple counting of the answers or a weighted counting.

In the first case, the numbers of positive and negative replies are counted, and then expressed as percentages of the total number of firms in the stratum. In the second case, a weighting coefficient is used for each firm representing an aspect of its size based on some of its features (for example, in terms of turnover, production or employment in the case of Spain). The weighting scheme aims to improve the comparability of the survey responses and reference series, rather than having an a priori idea that larger firms judge or predict better.
So, in order to obtain the sector’s results we use a two-stage weighting method.

1 In the first stage the data of a firm are weighted by the number of employees in relation to the total number of employees of the sector.

2 In the second phase, (for achieving results at a higher level of aggregation), the weighting factor used to add the results of the subsectors obtained in the first phase, is the percentage that the added value of this subsector represents on the value added of the sector or group whose data is sought.

The BSI includes industrial sub-sectors in terms of productive activity (only or main) according to the classification of activities NACE-93. These sub-clusters correspond to several groups of NACE-93 to three digits (or groups of closely related activities). For example, sector 17 is divided into three sub-sectors, one that encompasses groups NACE-93, 171 to 173, which includes other groups NACE-93 174 and 175 and another one nesting groups NACE-93 176 and 177.

Weighting at the first stage

For the answers of each company in the subsector, a weighting factor is assigned by calculating the percentage representing the number of employees of the company relative to total employment of all businesses in this subsector which answerers the survey. For example, the result referring to the level of total book orders in January 2004 in the two sub-sector members of the leather industry (tanning and finishing leather and articles thereof) would result from the way they are shown in Table.

Thus, the number of employees of each firm will relate to the option chosen in its answer to the question about its level of book orders (high, normal, low). At this point, the number of employees stated by each firm in each subsector is accumulated and the total so obtained is made equivalent to 100%; hence, a given firm will have a percentage of the total. Since a total (equivalent to 100%) is calculated for each one of the book order levels/options, the relative percentage of each firm can vary accordingly. This process is the first step of weight and is updated every month with the responses from the companies themselves to the number of employees on the payroll.

That is to say, at this early stage, for each variable investigated quantitatively there is a $x_i$ percentage distribution ($x_1 + x_2 + x_3 = 100$) of the three answers given. Specifically:

$$X_i = \left[ \frac{\sum W_{ij}}{W} \right] \cdot 100 = \left[ \frac{W_i}{W} \right] \cdot 100$$

Where $W_{ij} =$ weight (number of workers ...) of the company "j" which chooses "i" between high, normal, low on the variable investigated

The balance (S) of variable investigated for this industry is the difference between the percentage of companies saying that the percentage increases and the percentage of
those saying that it decreases (in this example, -50.2 in the case of sub-tanning and finishing and -22.1 in the manufacturing of leather).

Weighting at the second stage

In the second phase, each subsector was given a weight within the aggregated sectors added depending on the weight of its gross industrial value added (GVA), obtained from the data of the Survey of Industrial Companies (EIE) of the National Statistics Institute (INE). At this second phase we work at a three digits level of the NACE since the INE provides a breakdown of industrial added value up to this level. For instance, the weighting of the sector by GVA nesting NACE-93 174 and 175 is the sum of the weights of these subsectors 174 and 175 provided by the INE.

The gross value-added weights used are updated every few years, so as to capture structural changes that affect the weight of the different sectors that make up the industry. This is one of the changes, carried out in January 2004. Now we will need to change the three digits units of the NACE to the new classification. This is the most sensitive part of the operation change to the new NACE, because we need the National Institute of Statistics to provide us with the GVA in the industry unbundled to three digits according to the new NACE.

In case of a delay by the National Institute of Statistics we would be forced to keep the weights based only on the structure of employment.

With the increase in the level of aggregation, we get the data of industrial sectors that correspond to divisions of NACE-93 (two digits) of the aggregates by economic destination of the goods (consumer, intermediate, investment and other sectors) and those for the total industry. We also obtain data from the added dimension of industrial enterprises (up to 249 workers and 250 and above) and the current operation of the BSI provide us with results for total industry classified by economic destination of the goods they produce, but it should be noted that the sample is not designed to be representative at this level of breakdown for Autonomous Regions, therefore, the results are to be seen only as a rough estimate.

Related to the final decision regarding the timing of implementation of the new NACE for the business surveys we believe that we should take into consideration the schedule of Eurostat structural surveys.

Finally, it would be helpful, if it is possible, to have the official relationship of sectoral breakdown according to the new NACE, as soon as possible. Many thanks for your attention. I hope that my remarks will be useful and I am sure that with everyone’s efforts these matters will be solved in time.