

Use of the Ministry of Labour's Contribution Accounts Register for INE's Quarterly Labours Costs Survey

1. Introduction

The Quarterly Labour Costs Survey (QLCS) is a continuous quarterly statistical operation primarily aimed at tracking average labour cost per worker and per hour actually worked.

The concepts of labour cost, worker and hours actually worked are defined in Commission Regulation (EC) No 1726/1999 of 27 July 1999 implementing Council Regulation (EC) No 530/1999 concerning structural statistics on earnings and on labour costs as regards the definition and transmission of information on labour costs, which in turn is based on the European System of Accounts 1995 (ESA 95).

The survey is also the basis for constructing the Harmonised Labour Cost Index (Regulation (EC) 450/2003 of the European Parliament and of the Council of 27 February 2003 concerning the Labour Cost Index) and the variables 'hours worked' (No 220) and 'gross wages and salaries' (No 230) for Industry (Annex A) of Short-Term Statistics (Council Regulation (EC) No 1165/98 of 19 May 1998 concerning short-term statistics).

The frame of the QLCS is based on the social security contribution accounts register operated by the Ministry of Labour and Social Affairs.

This document describes the way that administrative dataset is used and explains the rationale for using it, which may be briefly summarised as follows:

1. Full coverage of the survey population: wage-earning employees.
2. Close match of the observed statistical unit (contribution account) and the theoretical statistical unit (local economic activity unit).
3. Data accurately regionalised.
4. Part of the questionnaire relies on data in an administrative document (contribution form TC-1) which uses the contribution account as the reference unit. This lightens the reporting burden considerably because respondents are asked simply to copy the data in the TC-1 form over onto the questionnaire.
5. Register information used to enhance estimation accuracy.

2. The concept of a contribution account

An employer who engages paid employees for the first time must, before commencing activities, register as an employer with the social security office (*Administración de la Tesorería General de la Seguridad Social*) closest to the employer's address. The employer then provides all required identifying documents with the registration application.

Employer registration is the administrative act by which the Social Security General Treasury assigns an employer an identification number for monitoring of its obligations under the respective Social Security Scheme. That number is treated as the first and principal Contribution Account Code.

All other codes assigned to an employer will be tied to that principal Code. It is important to point out that the employer must apply for a Contribution Account Code in each province in which it carries on business and in special cases where it is necessary to identify worker groups with particular contribution features.

The documents thus formalised remain in force for one year and are silently extended for further annual periods unless notice is given to the contrary. An employer must, within certain deadlines, report any changes to its details and workers and any temporary or permanent closure of business. Contributions in respect of a worker are mandatory until he/she is de-registered.

All principal and secondary contribution account codes are compiled along with a range of data, such as a unit's economic activity code under CNAE 93 (the Spanish national classification of activities, compatible with NACE Rev 1), number of workers, province, and so on, to create the Social Security Contribution Accounts General Register.

All the above leads to the following conclusion: The Social Security Contribution Account is made up of a set of employees working at one or more workplaces of one and the same employer within one province and generally under the same principal activity, but not necessarily with uniform features as regards contribution to Social Security.

3. Coverage, regionalisation and simplification of the questionnaire

Coverage

The group of workers covered by this register are employees working for enterprises engaging in industry and services, whatever the form of employment contract.

The group excludes workers in occupations under a Special Scheme (farming, marine, self-employed, domestic help, and so on). The group also excludes, except where proof of their being wage-earners is provided, the spouse, offspring, ancestors and other relatives of the employer by consanguinity or affinity and, where applicable, by adoption, up to the second degree inclusive, engaged at the employer's workplace(s), where they live in the employer's household and are dependent on him/her. Furthermore, the Register excludes people occasionally doing so-called 'friendly', charity or neighbourly work.

Therefore all economic activities are included except agriculture, fisheries, public administration, households employing domestic help and extra-territorial bodies. Specifically, the dataset includes sections C to K and M to O under CNAE 93.

This definition of 'workers' is consistent with revised Regulation No 1726/1999. Hence the survey population is covered entirely.

Regionalisation

Since a contribution account must be created for every province in which an employer operates, the 'province' variable can be used in sample design to obtain representative estimates by region.

Questionnaire summary

The questionnaire is divided into five main sections:

A. Workers: The survey asks for the number of workers associated with the account in respect of which there existed a contribution obligation for at least one day in the reference month; from these, the questionnaire asks for the number of workers in respect of which contributions do not accrue throughout the entire month and the number of contribution days for all workers.

From these data we obtain the number of workers per month.

B. Working time: We ask for the agreed working hours and leave for the majority of staff in each contribution account. We also ask for the hours of overtime done in the reference month.

C. Time not worked: We ask for the number of days or hours not worked for various reasons (leave, public holidays, temporary disability, absenteeism, etc.) in respect of all staff.

D. Earnings and non-earnings payments: For all workers we ask for the following items: gross accrued total, overtime earnings, bonuses, arrears, total non-earnings payments, temporary disability, unemployment, other direct social benefits and lay-off compensation.

E. Compulsory Social Security contributions: We ask for the TC-1 contribution form boxes required to obtain such information.

This section concerns legally determined contributions paid in favour of employees by the employer to the Social Security System to cover System benefits for illness, maternity, occupational accident, disability, retirement, family allowances, survivors' benefits, unemployment, occupational training, earnings guarantees and all other contingencies covered by Social Security.

Employers pay contributions using official forms. Specifically, employers must fill in a TC-1 form for each of their contribution accounts. On the TC-1 form employers state the various contribution charges for all workers associated with the contribution account, deductions and subsidies to which they are entitled, and the resulting payable amount. The questionnaire asks employers merely to copy over the required content of their TC-1 forms.

This simplifies the questionnaire considerably and makes it easier for the respondent to complete a response. Moreover, with electronic transmission of documents between government and employers becoming widespread (mostly with large employers), in the near future we shall be able to drop this part of the questionnaire and get the information direct from government.

4. Use of auxiliary information

For this survey we used stratified random sampling with optimal allocation, the sample units being contribution accounts.

The stratification basis uses three variables: Autonomous Community (a total of 17 where Ceuta and Melilla are considered jointly with Andalusia), economic activity (CNAE 93 division, a total 54 divisions) and unit size (8 size strata or groups).

Unit size is defined as number of workers in the unit.

The following groups were considered for stratification:

1. 1-4 workers
2. 5-9 workers
3. 10-19 workers
4. 20-49 workers
5. 50-99 workers
6. 100-199 workers

7. 200-499 workers

8. 500 workers and above

Strata of a unit size of 500 workers and above are studied exhaustively.

Estimate accuracy is enhanced by using separate ratio estimators – with the number of workers in the Social Security Contribution Accounts Register as an auxiliary variable – instead of a simple expansion estimator.

Given the following:

h \longrightarrow stratum defined by mixing the variables ‘activity’, ‘Autonomous Community’ and ‘size’;

N_h \longrightarrow population size of stratum h ;

n_h \longrightarrow sample size of stratum h ;

X_{hi} \longrightarrow value of variable X in unit i of stratum h ;

D_{hi} \longrightarrow number of workers, according to the SS register, in unit i of stratum h ;

$D_h = \sum_{i=1}^{N_h} D_{hi} \rightarrow$ total workers, according to the SS register, at register workplaces in stratum h ;

$d_h = \sum_{i=1}^{n_h} D_{hi} \rightarrow$ total workers, according to the SS register, at workplaces in the selected sample within stratum h .

The ratio estimator for the total of variable X in stratum h is:

$$\hat{X}_{Rh} = \hat{R}_h \cdot D_h = \frac{\sum_{i=1}^{n_h} X_{hi}}{\sum_{i=1}^{n_h} D_{hi}} \cdot D_h = D_h \cdot \frac{\sum_{i=1}^{n_h} X_{hi}}{d_h}$$

By grouping the terms associated with each observed value of X_{hi} in a stratum h , we find that the elevation factor in each stratum h is:

$$F_h \equiv \frac{D_h}{d_h}$$

The separate ratio estimator for the population total of variable X is given by the sum of ratio estimators for the totals of the strata in the population:

$$\hat{X} = \sum_h \hat{X}_{Rh} = \sum_h \left(F_h \cdot \sum_{i \in R} X_{hi} \right)$$

To estimate cost per worker per month, we use ratio estimator quotients. Thus:

$$\hat{C} = \frac{\hat{X}}{\hat{Y}} = \frac{\sum_{h \in G} \left(F_h \cdot \sum_{i \in R} X_{ih} \right)}{\sum_{h \in G} \left(F_h \cdot \sum_{i \in R} Y_{ih} \right)}$$

where:

\hat{C} —————> estimated labour cost per worker per month in ambit G (G being a given intersection of regions, activities and sizes);

\hat{X}, \hat{Y} —————> estimators of total cost and total workers, respectively.

Cost per hour is estimated in a similar way by replacing the 'total workers' variable (\hat{Y}) with the variable 'total hours actually worked'.