Harmonised Labour Cost Index

Methodology

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1. Introduction

The main objective of the Harmonised Labour Cost Index is to provide a common, comparable and timely measure of the labour costs for all the European Union, which allows for a follow-up of the evolution of said labour costs.

The legal basis for the process of the harmonisation of the Labour Cost Index (HLCI) is European Parliament and Council Regulation 450/2003 of 27 February 2003, that establishes a common framework for the compilation, transmission and assessment of comparable labour costs indices.

The harmonised labour cost index is a Laspeyres Index of the labour cost per hour worked, linked annually and based on a fixed structure of the economic activity broken down by sections of the NACE-93.

The source of information used to compile the HLCI are the provisional results drawn from the Quarterly Labour Cost Survey (QLCS). Said survey is used to obtain the cost per hour worked in the different sections of the NACE-93 (NACE-Rev.1), and the yearly weightings required to calculate the Laspeyres index. Calculations consider the year 2000 as the base period.

The publication is delayed 70 days after the reference quarter. The data for said reference period has a provisional nature until the following quarter, when it is revised and considered definite.

2. Definitions

Total labour cost per effective hour of work
Defined as the quotient of the total labour cost between the number of hours actually worked.

The total labour cost is the gross cost incurred by the employer by the use of the work factor. It includes wage cost plus other costs.

Effective hours are the hours actually worked both in normal work periods as well as in overtime work periods, including those hours lost in the workplace. They are obtained as the sum of agreed hours plus overtime and/or complementary hours minus hours not worked except hours lost in the workplace.

Total wage cost per effective hour of work
This is the result of dividing the total wage cost by the number of hours actually worked.

The total wage cost comprises all remunerations, both in cash and in kind, made to workers for the performance of their work services for others, whether it rewards effective work, whatever the method of remuneration, or the rest periods accounted for as work.
Consequently, the Wage Cost includes the base wage, wage supplements, overtime payments, bonuses and delayed payments.

All components are considered in gross terms, i.e. before deductions or payments to Social Security on behalf of the worker.

Other Costs per effective hour of work
Defined as the quotient of other costs between the number of hours actually worked.

Other costs include Non-Wage Payments and Obligatory Contributions to Social Security:
Non-Wage Payments are remunerations received by the workers not for their work activity, but rather as a compensation for expenses occasioned in the rendering of their work or to cover needs or situations of inactivity not attributable to the worker. They include direct corporate contributions (payments for temporary incapacity, unemployment, indemnities for dismissal,...), compensation payments (currency devaluation, wear and tear of tools, acquisition of work clothes, distance and urban transport allowance, relocation indemnities, contract termination indemnities,...) and other non-wage payments.
Obligatory Contributions to Social Security are the legally established contributions that the employers make to the Social Security System in favour of their employees to cover the services the system establishes, and which are those derived from illness, maternity, work accident, disability, retirement, family, survival, unemployment, vocational training, wage guarantee, or any other contingency covered by the Social Security System.

Labour cost excluding extraordinary payments and delays per effective hour of work.
This results from dividing the total labour cost minus bonuses and delayed payments by the number of hours actually worked.

3. Formulae employed

The following formulae are defined:

w_i^{tj} = labour cost per hour worked by the employees performing activity i during quarter t in year j.

ω_i^k = labour cost per hour worked by the employees performing activity i during year k.

h_i^k = hours worked by employees performing activity i in year k.

$W_i^k = \omega_i^k * h_i^k$ = labour cost for employees performing activity i in year k.

The ***basic Laspeyres formula*** used to calculate the HLCI during quarter t of year j, for base year k, for combinations of sections of the NACE Rev.1, results from the following expressions:

$$LCI_{tj(k)} = \frac{\sum_i w_i^{tj} h_i^k}{\sum_i \omega_i^k h_i^k} = \frac{\sum_i (w_i^{tj} / \omega_i^k) \omega_i^k h_i^k}{\sum_i W_i^k} = \frac{\sum_i (w_i^{tj} / \omega_i^k) W_i^k}{\sum_i W_i^k}$$ where $\frac{W_i^k}{\sum_i W_i^k}$ are the weights

and where (w_i^{tj} / ω_i^k) are the simple or elemental indices in a specific k section.

The following coefficient is defined to link year l and year l+1:

$$L_{l,l+1} = \frac{\sum_i \omega_i^{l+1} h_i^l}{\sum_i \omega_i^l h_i^l}$$ where $0 \leq l < l+1 < j$

Therefore, ***the formula for the chained laspeyres index*** for quarter t, in year j and with reference to base year 2000 is:

$LCI_{tj(0)} = 100. (L_{0,1}). (L_{1,2}) ..... (L_{J-2,J-1}). LCI_{tj(j-1)}$

5. Series adjustment

In order to perform a comprehensive interpretation of the results, the series of indices are obtained as follows:

a) ***Gross series:*** the original series, without adjustments.

b) ***Series corrected for calendar effects:*** series adjusted by working days (including the Easter effect)

c) ***Series seasonally adjusted and corrected for calendar effects:*** series corrected both for calendar effects and for periodical or seasonal effects (bonuses, holidays,...).

The series that are adjusted for seasonal and calendar effects are subject to variations; on adjusting time series, a series of parameters are estimated, which change by the final data as compared with the provisional data, or because a new quarter is included in the historical series, by which, they are de-seasonalised as a whole (from the first quarter of 2000 to the latest data).

So as to achieve an efficient application to the European aggregates, the TRAMO&SEATS programme has been used to follow the seasonal adjustment procedures recommended by the Commission (Eurostat).