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1. Contact

1.1 Contact organisation

National Institute for Statistics and Economic Studies (INSEE)

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2. Statistical presentation

2.1 Data description

The Labour Cost Survey 2020 (LCS 2020), the results of which were delivered by INSEE to Eurostat on 7 July 2022, is the result of the concatenation of data from the annual 2019 and 2020 labour cost surveys (collected in 2020 and 2021 respectively), after updating the financial or working time information collected for 2019 so that it is representative of 2020. These annual surveys cover the private sector, the hospital civil service and the local civil service.

Data on apprentices are taken from administrative data (All employees database – BTS, see below) for 2020.

In addition to those data, administrative data from the System for information on civil servants (Siasp), covering the year 2020, were used for the state civil service. Those Siasp 2020 data therefore complete the scope of LCS to also include section O of Nace rev.2 (Public administration), which remains optional according to the European regulations mentioned above, but which inclusion is encouraged and provided for in the implementation rules "Labour Cost Survey 2020, Eurostat's arrangements for implementing the Council Regulation 530/1999 and the Commission Regulation 1737/2005".

2.2 Classification system

Nomenclatures used are those indicated in the implementing rules of the regulation concerning labour cost statistics « Labour Cost Survey 2020 ; Eurostat’s arrangements for implementing the Council Regulation 530/1999, the Commission Regulations 1916/2000 and 1738/2005 ».

2.3 Sector coverage

The scope includes employees and establishments belonging to a company with at least 10 employees located in France (except Mayotte), in sections B to S of the economy according to the NACE rev 2 classification.

2.4 Statistical concepts and definitions

Concepts and definitions of variables follow the implementing rules of the regulation concerning labour cost statistics « Labour Cost Survey 2020 ; Eurostat’s arrangements for implementing the Council Regulation 530/1999, the Commission Regulations 1916/2000 and 1738/2005 ».

2.5 Statistical unit

Statistical units are "local units" and "employees". Results transmitted to Eurostat are however aggregated (by section, company size range and region), in accordance with the Council Regulation 530/1999 and the Commission Regulation 1737/2005.

2.6 Statistical population

The scope includes employees and establishments belonging to a company with at least 10 employees located in France (except Mayotte), in sections B to S of the economy according to the NACE rev 2 classification.

2.7 Reference area

The coverage is France (excluding Mayotte).

2.8 Time coverage

Year of reference: 2020

2.9 Base period

Not applicable

3. Statistical Processing

3.1 Source data

*** Sources**

LCS 2020 is based on the following sources: annual labour cost surveys (Ecmo 2019 and Ecmo 2020), statistical sources based on exhaustive administrative sources and national accounts.
Unlike what was done for LCS 2016, the survey among state civil service employees (FPE 2018) wasn't mobilised for LCS 2020.

The 2019 and 2020 labour cost surveys

"Ecmo" surveys are annual surveys, constituting the second part of the four-yearly cycle of surveys called "Ecmoss[1]" ("Survey on Labour Costs and Wage Structure", "**E**nquête sur le **C**oût de la **M**ain d'**O**euvre et la **S**tructure des **S**alaires" in French). Those surveys cover establishments and employees in the private sector, the hospital civil service and the local civil service.

Statistical sources based on administrative sources

Statistical sources based on exhaustive administrative sources are used both as a sampling frame for surveys and as sources of additional information for surveys, which allowed to reduce the burden. Those sources are the following:

Nominative Social Declarations (DSN): those administrative declarations have replaced the annual social data declarations (DADS) in the private sector. They concern any employee in the company receiving a salary or wage, regardless of the amount or duration of employment, and are intended primarily for the social security bodies and the tax authorities. The social security bodies use it to calculate some of the contributions due by employers, to control the payment of all their contributions and to determine employees' entitlements to retirement pensions and health insurance cover. INSEE is also an official recipient of those declarations, in order to produce a statistical file (the "private" part of the All employees database mentioned

1 Two years of "ESS" surveys on the structure of wages, followed by two years of "Ecmo" surveys on labour costs.

above). The statistical file is compiled by INSEE from those declarations, after checks – notably integrity checks, setting to statistical format (concepts), checks and statistical adjustments.

System for information on civil servants (Siasp): this exhaustive statistical file is notably built from the payroll files of state employees for the state civil service, and from annual social data declarations (DADS) for hospital civil service and local civil service. It should be noted that, as in the private sector, the DSN gradually replace those sources in the public sector (between 2020 and 2022). The Siasp system is the reference source to measure the workforce, payroll and hours paid in the public sector.

In the DSN as in the administrative sources used to built the Siasp statistical file, information on earnings are used as a basis for tax and social security calculations. Given these issues, there are therefore assumed to be, and are, of good quality.

All employees database (BTS, "**B**ase **T**ous **S**alariés" in French): this is the annual statistical file which combines, for the Ecmoss scope, information from the DSN (mainly on the private sector) and from Siasp (for the public sector). This database provides information on type of job and earnings received for each employee.

Company register: the statistical business register (Sirus) lists all companies and local units (establishments). It is based on the Sirene administrative register ("**S**ystème **I**nformatisé du **RE**pertoire **N**ational des **E**ntreprises et des établissements" in French) and allows to complete the *establishment* sample with information that is not in the DSN, such as the department or the market or non-market nature of the establishment's activity.

Those administrative sources and resulting statistical files are used upstream of the survey to define the sampling frame for establishments and employees, as well as to define the allocation of the number of establishments and employees to be sampled by stratum (see below). They also provides downstream the calibration bases (cf. 6.3.3) as well as additional information not requested in the surveys or compared with the survey responses (see point 8).

* **The sampling**

The Ecmo 2019 and 2020 sample

The sampling method for Ecmo 2019 and 2020 is a two-stage stratified sample design: a 1st stage composed of establishments and a 2nd stage composed of employees in those establishments. At both stages, it is a stratified simple random sampling, negatively coordinated with previous editions of these surveys as well as with other business surveys recently conducted by the French Public Statistical Service.

The stratification of the *establishments* sampling frame for Ecmo 2020 has been simplified compared to the one for Ecmo 2019, due to an initially too large number of strata, making the downstream processing too complex. The division of the variables used to define this simplified stratification is as follows:

- sector of activity: 18 modalities – sections (first level of NACE);
- company size: 5 classes – 10-49 / 50-249 / 250-499 / 500-999 / 1000+;
- establishment size: 3 classes – 1-9 / 10-99 / 100+;
- geographical location: 3 modalities – DOM (Overseas Departments) / Île-de-France / province excluding DOM.

Strata correspond to combinations of crosses of these modalities (combinations made to obtain strata of a size greater than a minimum threshold set *a priori*). For the reference year 2020 (Ecmo 2020 survey), sectors I (accommodation & food service activities) and R (arts, entertainment and recreation), which were

particularly affected by the health crisis, were oversampled. The Ecmo 2020 sample also contained more small companies than the one for Ecmo 2019.

For the stratification of the *employees* sampling frame, the same criteria as for the *establishments* sampling frame are used, to which we add the managerial/non-managerial criterion.

Establishment and *employee* allocations are calculated from the administrative databases according to an extension to two-stage surveys of the Neyman allocation principle under constraints: minimisation of the variance of the average hourly wage estimator (hourly wage calculated as the gross wage divided by the number of hours paid, these values being observed in the BTS) and under constraints. At the 1st stage, a minimal number of establishments to be sampled by stratum is calculated (with a minimal threshold of 3 establishments), then at the 2nd stage a minimal number of employees to be sampled in each stratum. At employee level, the allocation is made by distinguishing between managers and non-managers within each stratum previously defined. Another constraint (to limit the collection burden on respondents) is that a maximum of 24 employees by establishments can be sampled (this constraint is even reduced for the smallest establishments: 12 employees maximum for establishments with 10 to 19 employees and 4 employees maximum for establishments with less than 10 employees). Allocations are calculated separately for the private and public sectors.

In fine, for each of the two annual surveys, Ecmo 2019 and Ecmo 2020, about 18 000 establishments are surveyed, as well as 165 000 employees.

*** <u>The enrichment of surveys</u>**

Administrative data from BTS are used downstream of the survey to provide additional information (*via* a matching of administrative data of year N with the survey of reference year N). They are also used to provide data on apprentices (BTS 2020 for the LCS 2020 output). For state civil service employees, variables concerning earnings and hours paid come from the Siasp 2020 source.

For the Ecmo surveys, some variables from the BTS source, which are also present in the survey questionnaire, are used during the adjustment phase to deal with partial non-response or to check the quality of the variables. These include total gross earnings, number of hours paid, duration of pay in days and the percentage of work.

3.2 Frequency of data collection

The Ecmo surveys are conducted two years in a row every four years (alternating with the structure of earnings survey). Statistical databases derived from administrative data (BTS and Siasp) provide annual information.

3.3 Data collection

The Ecmo 2019 and 2020 are employer surveys. Establishments can answer by paper questionnaire, computer file (for large companies) but also by Internet. Internet collection is made via the “Coltrane” portal (“**COL**lecte **TRAN**sversale d’**E**nquête” in French) for establishments with less than 5 employees surveyed. Establishments receive an “Establishment” questionnaire and questionnaires about one or more of their employees who are specifically named (between 1 and 24). It’s therefore employers who respond to the “Employee” questionnaires.
The Ecmo 2019 collection (conducted in 2020) were strongly affected by the Covid-19 health crisis. The collection schedule was modified, with data collection officially starting in mid-June instead of mid-May (material preparations for the collection were delayed because of the general lockdown of the population in France between mid-March and mid-May) and the return of questionnaires was requested by 30 September instead of mid-June; the response rate of the survey was also lower than in previous years (see section

6.3.3). From October onwards, the work schedule for final results production was postponed by an average of one month for each step. The Ecmo 2020 collection (conducted in 2021) followed a more classic schedule, running from May to December, with a response rate that has largely recovered (but without returning to its usual pre-crisis level, see point 6.3.3).

3.4 Data validation

During collection, in order to limit measurement errors, INSEE has a data checking tool in the computer application (called the “expertise batch”) that enables the monitoring of Ecmoss surveys. This IT tool makes it possible, during collection, to identify anomalies in the consistency of the data collected, so that outliers can be quickly detected and corrected by the management team. For example, it is automatically checked that items included in a global amount are lower than that amount. In addition, order of magnitude are checked using the distributions of the data from the previous survey. Thus, it is possible to detect and correct data entry and scanning errors, amounts that come from company’s accounting and not from the establishment, or calculation errors by respondents that can go as far as multiplying or dividing amounts by 10.

From the sending of the questionnaire to the end of the collection, a team of managers ensures the control of questionnaires, with a reminder to the companies in case of important errors. In order to avoid calling back companies too long after the return of their questionnaires, data entry takes place continuously as soon as the first responses from establishments are received.

After collection, INSEE and DARES (the statistical service of the Ministry of Labour) proceed to adjustments (alignment, calibration, treatment of non-response) and to an in-depth validation based on comparisons with the previous edition of the survey, as well as with other administrative or survey data sources (see section 8).

3.5 Data compilation

Not applicable

3.6 Adjustment

*** Processing used to update 2019 data**

The Eurostat database contains observations surveyed for the year 2019 and others for the year 2020: earnings variables observed in 2019 are therefore adjusted (or updated) to be representative of 2020 (the so-called "ageing" of the data).

The usual estimation method uses the evolution of gross wage per paid hour, estimated in the BTS between years N-1 and N, by stratum (N being the reference year): most of the components of the numerator of the hourly labour cost are made to evolve as the hourly wage observed in the BTS; on the contrary, the denominator of the hourly labour cost (i.e. the volume of hours), a quantity which is usually stable at macro level, is not changed. This usual method is therefore based on the hypothesis of relative proportionality by stratum between the hourly wage from the BTS and the hourly labour cost from Ecmo (which includes wages but also other labour costs) and on the hypothesis of relative stability of the volume of works from one year to the next. The usual strata are the crossing of the NACE section, the company size (in classes) and the detailed region.

But, given the specificities due to the health crisis, the hypothesis of a stable volume of work is no longer valid in 2020. Indeed, in the context of economic recession, the year 2020 was impacted by unprecedented variations of payroll and number of hours (paid and worked), in different proportions. As for the hypothesis of relative proportionality between the hourly wage and the hourly labour cost, it’s not fully assured between 2019 and 2020 insofar as the latter may have evolved slightly differently in the sectors most affected by the crisis, where support measures have notably taken the form of reductions in social contributions. The method of “ageing” the data has therefore been adapted to take account of the invalidity of the first of those two

hypothesis (but not the second, as its impact on the parameters of interest assessed from the survey is much more marginal).

At the end, the stratification used for the ageing of the Ecmo 2019 data, taking into account the specificities of this time period is defined by the combination of:

- geographical location in 3 modalities (Île-de-France, DOM, province of mainland France);
- company size in 5 classes (10-49 / 50-249 / 250-499 / 500-999 / 1000+);
- sector of economic activity, according to a specifically constructed nomenclature (ad hoc aggregation of division (2nd level of NACE)). This nomenclature was constructed using regression model tests explaining the evolution of the logarithm of gross wage from the BTS between 2019 and 2020 and aiming to determinate the most appropriate sectoral split to apply the "ageing" of the data.

It was then decided:
– to "age" earnings (D1 and detail of the D1), payroll taxes (D4) and employer subsidies (D5) with the evolution of gross wage observed in the BTS, by stratum;
– to "age" hours worked (B1 and detail of the B1), as well as hours paid (C1 and detail of C1) with the evolution of hours paid observed in the BTS, by stratum;
– not to "age" vocational training expenditure (D2) and the other employer expenditure (D3), nor the number of employees (A1 and detail of A1).

Other adjustments made to the surveys (total non-response and partial non-response adjustments) are described in section 8.

4. Quality management

4.1 Quality assurance

In order to evaluate their relevance, Ecmo surveys are reviewed every 4 years in front of the National Council for Statistical Information (CNIS) and the Official Statistics Label Committee. This council and this committee check the interest and statistical quality of the operation, its process, the statistical and accounting standards and the tests of the questionnaire carried out before the survey. They also ensure that consultation has taken place with the partners concerned. They provide an opinion about the opportunity of the survey and a label of general interest and statistical quality. The Label Committee may also grant a response obligation, which ensures that the survey results are more representative.
CNIS gave a favourable opinion on the Ecmo 2019 and 2020 surveys (opinion No. 67 of 8 June 2017). The Official Statistics Label Committee gave these surveys the label of general interest and statistical quality and the grant of mandatory status, under visa number 2020A047EC for the Ecmo 2019 survey and 2021A026EC for the Ecmo 2020 survey.

4.2. Quality assessment

Besides this *ex-ante* labelling procedure, the LCS is also evaluated by INSEE during the results validation phases (see section 3.4 and 8). After adjustments done by INSEE and the statistical service of the Ministry of Labour (see section 3.4), INSEE proceeds to an in-depth validation of the data using comparisons with the previous edition, or with external sources (National Account, BTS, Labour cost index (LCI), see section 8).

5. Relevance

5.1 User needs

Many national stakeholders use the LCS 2020: INSEE, the Ministry of Labour (notably the studies and statistics department, DARES), researchers.
DARES uses in particular the “Employees” section of the Ecmoss survey to answer many questions on the various components of earnings and the work time organisation (components of employees’ earnings, characteristics of employees at the minimum wage, employee savings scheme, overtime, working time, etc.). Information from these surveys is also used for the national accounting at INSEE. Social science researchers also use this source of data on both establishments and their employees to study companies' pay practices.

5.2.User satisfaction

Not applicable

5.3 Completeness

Every mandatory variables required by the Eurostat Regulation are provided.

5.3.1 Data completeness – rate

Not applicable

6. Accuracy and reliability

6.1 Overall accuracy

Not applicable

6.2 Sampling error

6.2.1 Sampling errors – indicators

The LCS 2020 databases are made up with variables available at employee level (e.g. hours) and variables available at establishment level (e.g. social contributions). The variance of the estimators of the mean of the variable of interest was calculated using analytical variance calculations that take into account the complexity of the sample design (two-staged stratified sampling design, concatenation of two survey years). In addition, those precision calculations take into account both the uncertainty linked to sampling and that linked to non-response.

Tables 1 and 2 below present, for LCS 2020, the precision (standard deviation and coefficient of variation (CV)) for the estimators of the mean of the main variables of interest: hourly wage and hourly labour cost (excluding apprentices).

Table 1 – Precision for the hourly wages excluding apprentices (D111/(B11+B12))

	Estimator	Standard deviation	CV (%)
Mining and quarrying (B)	26,63	1,32	4,97
Manufacturing (C)	28,50	0,39	1,36
Electricity, gas, steam and air conditioning supply (D)	38,82	1,01	2,61
Water supply; sewerage, waste management and remediation activities (E)	26,17	1,00	3,81
Construction (F)	25,79	0,33	1,27
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	24,47	0,47	1,91
Transportation and storage (H)	23,21	0,44	1,90
Accommodation and food service activity (I)	18,49	0,47	2,54
Information et communication (J)	35,64	0,81	2,26
Financial and insurance activities (K)	40,13	1,30	3,23
Real estate activities (L)	28,43	4,24	14,91
Professional, scientific and technical activities (M)	35,28	0,50	1,42
Administrative and support service activities (N)	20,39	0,52	2,55
Public administration and defence; compulsory social security (O)	23,96	0,21	0,89
Education (P)	26,28	0,14	0,54
Human health and social work activities (Q)	22,68	0,58	2,56
Arts, entertainment and recreation (R)	26,69	2,48	9,29
Other service activities (S)	23,68	0,94	3,96
Île-de-France (FR1)	32,61	0,59	1,80
Centre-Val de Loire (FRB)	24,05	0,54	2,23
Bourgogne-Franche-Comté (FRC)	23,05	0,41	1,79
Normandie (FRD)	23,42	0,44	1,88
Hauts-de-France (FRE)	23,75	0,36	1,53
Grand-Est (FRF)	24,15	0,64	2,63
Pas de la Loire (FRG)	23,41	0,37	1,59
Bretagne (FRH)	23,18	0,44	1,93
Nouvelle-Aquitaine (FRI)	23,55	0,86	3,66
Occitanie (FRJ)	24,12	0,56	2,30
Auvergne-Rhône-Alpes (FRK)	25,17	0,35	1,38
Provence-Alpes-Côte d'Azur (FRL)	25,56	0,56	2,19
Corse (FRM)	25,35	1,27	4,99
DOM (FRY)	26,22	1,09	4,17
10 to 49 employees	23,08	0,13	0,59
50 to 249 employees	24,82	0,20	0,81
250 to 499 employees	26,56	0,53	2,01
500 to 999 employees	27,44	0,62	2,28
1 000 employees or more	28,13	0,40	1,43
All	26,28	0,18	0,68

Table 2 – Precision for the hourly labour cost excluding apprentices ((D111+D121+D122+D2+D3+D4-D5)/(B11+B12))

	Estimator	Standard deviation	CV (%)
Mining and quarrying (B)	38,78	2,08	5,37
Manufacturing (C)	41,30	0,77	1,87
Electricity, gas, steam and air conditioning supply (D)	53,82	3,22	5,99
Water supply; sewerage, waste management and remediation activities (E)	38,59	1,93	5,01
Construction (F)	35,21	0,49	1,40
Wholesale and retail trade; repair of motor vehicles and motorcycles (G)	34,16	0,73	2,15
Transportation and storage (H)	32,12	0,76	2,37
Accommodation and food service activity (I)	23,85	0,71	2,97
Information et communication (J)	52,04	1,24	2,39
Financial and insurance activities (K)	60,33	1,93	3,19
Real estate activities (L)	42,97	6,69	15,56
Professional, scientific and technical activities (M)	50,55	0,81	1,61
Administrative and support service activities (N)	28,01	0,87	3,09
Public administration and defence; compulsory social security (O)	38,22	0,38	1,00
Education (P)	45,27	0,24	0,53
Human health and social work activities (Q)	34,39	0,86	2,50
Arts, entertainment and recreation (R)	38,14	3,42	8,98
Other service activities (S)	34,27	1,50	4,38
Île-de-France (FR1)	48,76	0,89	1,82
Centre-Val de Loire (FRB)	35,93	1,09	3,02
Bourgogne-Franche-Comté (FRC)	34,08	0,75	2,21
Normandie (FRD)	35,60	0,82	2,31
Hauts-de-France (FRE)	35,42	0,98	2,76
Grand-Est (FRF)	35,86	0,97	2,70
Pas de la Loire (FRG)	34,16	0,67	1,95
Bretagne (FRH)	34,40	0,86	2,51
Nouvelle-Aquitaine (FRI)	34,99	1,23	3,51
Occitanie (FRJ)	36,12	1,02	2,81
Auvergne-Rhône-Alpes (FRK)	37,26	0,52	1,40
Provence-Alpes-Côte d'Azur (FRL)	38,45	0,81	2,10
Corse (FRM)	34,48	3,71	10,77
DOM (FRY)	38,82	3,40	8,76
10 to 49 employees	32,56	0,21	0,65
50 to 249 employees	36,07	0,34	0,93
250 to 499 employees	39,90	0,89	2,23
500 to 999 employees	41,10	1,02	2,49
1 000 employees or more	42,82	0,66	1,54
All	39,10	0,30	0,75

Accuracy of the estimator of the parameters of interest on all employees, i.e. including apprentices, is even better as most of the information on apprentices is taken from exhaustive administrative sources.

6.3 Non-sampling error

6.3.1 Coverage error

Civil servants in the French armed forces are excluded from the scope of the survey[2]. The survey sampling for a year N is based on employees in post on 31 December N-1 (in general), so employees entering in the course of the year N are not in the scope of the survey, by construction. This lack of coverage is corrected by the final calibration on the exhaustive statistical files (BTS) of year N, at the end of the processing.

6.3.1.1 Over-coverage – rate

To avoid over-coverage errors, during the adjustment stages, a first step is to remove the "out-of-scope" employee questionnaires: 3,2% of cases in the Ecmo 2019 survey and 4,3% in the Ecmo 2020. Those cases correspond, among other things, to positions that ended before 2019 in the Ecmo 2019 and before 2020 in the Ecmo 2020.

6.3.1.2 Common units - proportion

Not applicable

6.3.2 Measurement error

During collection, the data checking tool allows consistency anomalies to be detected and quickly corrected by the management team (also see section 3.4).
The central variables of the survey (payroll and employer contributions) are mainly checked with the help of individual data from the BTS and of other variables from the survey, in a consistency analysis conducted at individual level, which may lead to adjustments of the reported variables (and imputations when they're missing, see part 6.3.3).

See section 6.3.4.1 for the table detailing the adjustment rates by variables and section 6.3.3 detailing the imputation methods.

6.3.3 Non response error

For the Ecmo surveys, two set of weights are used to concatenate the data: one for data from employee questionnaires (employee weights) and one for data from establishment questionnaires (establishment weights). For each of them, for both the Ecmo 2019 and the Ecmo 2020 surveys, final weights are obtained in two steps: initial survey weights are corrected for total non-response and then modified by calibration.

*** Response rate**

For both Ecmo 2019 and 2020 surveys, 35,855 questionnaires were sent to establishments, covering 318,007 employees. 23,830 establishment questionnaires were received, for 216,631 employees. This represents a response rate of 68,1% for establishment questionnaires and 66,5% for the employee questionnaires.
The response rate observed in 2020 (Ecmo 2019 collection) was lower than usual (around 60%, compared to 80% in the past) due to the heath crisis. In 2021 (Ecmo 2020 collection) the response rate increased compared to 2020 and thus partially recovered to 74%.

*** Treatment for total non-response**

Files are corrected for total non-response by post-stratification. When a unit is non-respondent (whether it is an establishment or an employee), its weight is reallocated homogeneously to the responding units in the same sampling stratum. Establishments that do not answer a whole group of variables or some "key" variables, such as those relating to payroll or social contributions, are considered to be in total non-response.

2 One of the reasons for this is that the data transmitted to INSEE through the military payroll files do not include addresses.

*** Treatment for partial non-response**

Data transmitted are aggregated data. Employee and establishment questionnaires used to compile the final aggregates are subject to treatment for partial non response (missing or incorrectly filled answers in questionnaires that are otherwise partially correctly filled in).

For the establishment questionnaire, the first step is to distinguish respondents according to their level of response. Some of them sometimes answer for the company when the information is not known at establishment level. In that case, values concerned are imputed using the establishment's share of the company's payroll (data from the BTS).

Then, in case of partial non-response, data are adjusted:

– By deterministic imputation, based on internal consistency within the survey (for example, if the total social contributions are missing but the establishments filled in all questions about employer contributions, the total contributions are imputed with the sum of contributions) or on the consistency between data of the survey and administrative data from the BTS;

– By random imputation, by stratified hot-deck when the origin of error is not identified.

A special treatment has been given to data concerning short-time working for the Ecmo 2020. The short-time working scheme allows a company, which reduces its activity below the legal working hours or temporarily suspend all or part of its activity, not to break employment contracts binding it to its employees. The short-time working compensation system provides a replacement income to employees subject to this scheme, whose wages have been reduced as a result. This replacement income is partially funded by the public administration (and even totally funded at the peak of the health crisis). The use of this scheme exploded during the health crisis. In the context of the Ecmo 2020 survey, some establishments had reported an amount of compensation refunded by the public administration that was greater than short-time working compensation paid to employees (which is theoretically impossible since the latter, according to the instructions given in the survey questionnaire, should not be limited to the part paid by the employer but should also include the part paid by the public administration). For establishments which declared an amount refunded by the public administration greater than the compensation paid, the amount of compensation was therefore imputed by the amount refunded (knowing that at the peak of the crisis, and for a prolonged period until 2021 in the most affected sectors, the public administration fully refunded the compensation).

For the employee questionnaire, it was also needed to impute a number of variables. Central variables of the survey (gross wages and number of hours paid) are checked in two ways: firstly, using individual data from the BTS, and secondly, using the other variables of the survey in a consistency analysis conducted at individual level, which may lead to adjustments of the reported variables, and to imputations when they are missing. The main principles of adjustment operations are the following:

– The value collected by the questionnaire is kept even in case of inconsistency with the value from the BTS, as long as the answers given to the different questions of the questionnaire are consistent which each other;

– When outliers or missing values or inconsistencies within the questionnaire or with the data from the BTS are detected, some variables are adjusted by deterministic imputations with variables from the BTS, others are adjusted by modelling (statistical imputation). Consistency tests are also applied to a number of essential variables for the transmission of results to Eurostat but not directly involved in the calculation of the main parameters of interest in the survey (bonuses, overtime, etc.). Regardless of the source, earnings data are considered to be more reliable than working time data; therefore it is those latter which are modified in case of inconsistency.

Final adjustments are then made to employee data, to comply with Eurostat constraints; in particular, an imputation is made for employees paid at a flat daily rate, for whom numbers of hours paid and worked must be provided, as for other employees.

See section “6.3.4.1 Imputation rate” for the detailed table of imputation rates by variable.

*** Treatment of weights of influential units**

A program of treatment of influential units is then applied to the Ecmo 2019 and 2020 employee files in order to control the influence of individuals who, because of their atypical response and their weight, may alter the precision of the estimates of the group they belong to without their response being incorrect. The treatment of influential units is done by the Kokic and Bell method ("Optimal winsorizing cut-offs for a stratified finite population estimator", Journal of Official Statistics, vol. 10, n° 4 : 419-435, 1994). This method modifies the weight of the individual in such a way as to significantly reduce the variance of the estimates (thus improving precision) without generating significant bias or losing the information of the response given by the individual. It improves the precision of the estimates of hourly wages, especially in groups with high hourly wage variance or in groups with low numbers of workers.

*** Particular treatment in the sector I in 2020**

A correction was made in sector I (accommodation and food service activity) for the Ecmo 2020 survey data. Indeed, the evolution of the social contribution rate measured in the survey was surprising in view of the numerous support plans ("tourism plan" notably) which targeted the sectors most affected by the health crisis and which mainly resulted in reductions or exemptions from employers' social security contributions (counter-intuitively, a slight increase in the contribution rate before adjustment is observed in Ecmo). Above all, this evolution of the contribution rate is in contradiction with the one calculated in other sources (labour cost index – LCI –, national accounts), in which a significant decrease is indeed observed. It therefore seems that a large proportion of establishments in this sector declared their social security contributions before exemptions (and in particular before exemptions linked to the measures put in place during the Covid19 health crisis).

The correction applied concerns the social security contributions provided by companies with less than 250 employees (target companies for the various support plans). The multiplication coefficient applied to those contributions is calculated as

$$\frac{1}{max\left(1, \frac{establishment\ charge\ rate}{'target'\ charge\ rate}\right)}$$

the 'target' contribution rate appearing in the formula corresponding to

$$Urssaf\ contribution\ rates\ for\ sector\ I_{2019} * \left(1 + evolution\ of\ the\ charge\ rate\ LCI_{2019-2020}\right)$$

(Here, Ursaff contributions = social security contributions)

This correction makes it possible not to correct establishments with an already low contribution rate (i.e. those assumed to have correctly declared their contributions net of reductions or exemptions in contributions), and to correct the others more strongly. Among the 280 establishments targeted, the value for 208 establishments were corrected.

*** Calibration of data**

Ecmo 2019 and 2020 database

The calibration of the Ecmo surveys is done in two stages, each year of survey is calibrated separately at establishment level and employee level. The calibration on margins is carried out using the Calmar[3] macro (the calibration function used is the one corresponding to the raking ratio method with weight ratios limited by thresholds fixed *ex ante*).

Variables from the BTS, observed for the sample of respondents, are calibrated to the margins calculated from exhaustive BTS files corresponding to the year of survey.

For employees, calibration variables are the number of employees, the gross wage, the number of days under contract in the year and the number of hours paid, broken down by:

– socio-professional category in 4 modalities (managers/intermediate occupations/clerical, sale and service employees/industrial and blue-collar workers) * gender;

3 CALculation on MARgins, an iterative method for modifying the weights of the cells of a cross-tabulation table to obtain *a priori* fixed margins: https://www.insee.fr/fr/information/2021902

– being on a fixed-term contract / not being on a fixed-term contract;
– full-time / part-time;
– geographical location (divided in 13 regions – NUTS – with Corse grouped with PACA region on the one hand, overseas departments grouped together on the other hand);
– company size in 5 modalities (10-49; 50-249; 250-499; 500-999; 1 000 or more);
– sector of activity in sections of Nace A21 (with section C – manufacturing – split into 3: divisions 10-12; divisions 26-29; rest of section C).

For establishments, calibration variables are the number of establishments and sum of gross wages per establishment, broken down by:
– geographical location (divided in 13 regions – NUTS – with Corse grouped with PACA region on the one hand, overseas departments grouped together on the other hand);
– company size in 5 modalities (10-49; 50-249; 250-499; 500-999; 1 000 or more);
– sector of activity in sections of Nace A21 (with section C – manufacturing – split into 3: divisions 10-12; divisions 26-29; rest of section C).

6.3.3.1 Unit non-response – rate

Not applicable

6.3.3.2 Item non-response – rate

Not applicable

6.3.4 Processing error

Not applicable

6.3.4.1 Imputation – rate

Variables in Ecmo 2019 were adjusted in the same way as those in Ecmo 2020 (except for the additional adjustments specific to 2020, the one on sector I and the one related to short-time working, both described above – see point 6.3.3). Adjustment rates are here given only for the Ecmo 2020 survey (table 3), excluding apprentices, for whom data transmitted to Eurostat are from the BTS.

The adjustment rates relate the number of individuals (here, unweighted) whose response was imputed or adjusted to the total number of individuals contributing to the estimation.
A Eurostat variable is considered to be adjusted or imputed as soon as one of its components is. Each component is taken into account for the rate calculation in proportion to its weight (at sector level) in the corresponding Eurostat variable. The adjustment indicator for a Eurostat variable for an individual is therefore written as a weighted sum of the adjustment indicators for each components entering the calculation of this variable.

Table 3 – Adjustment rates for variables in Ecmo 2020

Variable	Adjustment rate
D11111 – Direct remuneration, bonuses and allowances paid in each pay period	1,8 %
D11112 – Direct remuneration, bonuses and Allowances not paid in each pay period	9,8 %
D1112 – Payments to employees' savings schemes	12,0 %
D1113 – Payments for days not worked	0,0 %
D1114 – Wages and salaries in kind	7,1 %
D1211 – Statutory social-security contributions	7,9 %
D1212 – Collectively agreed, contractual and voluntary social-security contributions	5,7 %
D122 – Employers' imputed social contributions (excluding apprentices)	9,8 %
D2 – Vocational training costs	1,1 %
D3 – Other expenditure paid by the employer	15,1 %
D4 – Taxes	1,1 %
D5 – Subsidies received by the employer	0,4 %

6.3.5. Model assumption errors

Not applicable

6.4. Seasonal adjustment

Not applicable

6.5. Data revision – policy

Not applicable

6.6. Data revision – practice

Not applicable

6.6.1 Data revision – average size

Not applicable

7. Timeliness and punctuality

7.1. Timeliness

7.1.1 Time lag – first results

Eurostat published the first LCS results, including French data, in mid-September 2022. For France, those results were based on the final data transmitted to Eurostat on 7 July 2022.
First national publication produced by INSEE were published at the end of 2022 or at the beginning of 2023 ("Insee-Résultats" containing tables of very detailed results, published on 3/11/2022, "Insee-Focus" publication released on 4 January 2023) and those produced by DARES (Ministry of Labour) should be published in 2023 (Dares-Analyses).

7.1.2 Time lag – final results

Not applicable

7.2 Punctuality

The collection schedule for the Ecmo 2020 (collected in 2021) was respected and is in line with that of the years before the health crisis. The collection schedule for the Ecmo 2019 (collected in 2020) was impacted by the health crisis: it was adapted ex ante (in particular by postponing the start of collection by one month and simplifying the protocol), but once redefined in this way, it was also respected.

More precisely, for Ecmo 2020, the timetable for the survey was as follows:

– mid-March 202: sending out the announcement letters;
– early May 2021: paper questionnaires sent to establishments;
– mid-May 2021: beginning of the collection phase;
– July 2021: reminder letters sent to headquarters;
– September 2021: letters of formal notice sent;
– October 2021: dispatch of the statement of non-response ;
– December 2021: end of collection.

For Ecmo 2019, the timetable for the survey was impacted by the health crisis and in particular by the containment:

– mid-March 202: sending out the announcement letters;
– early June 2021: paper questionnaires sent to establishments;
– mid-June 2021: beginning of the collection phase;
– September 2021: reminder mailing;
– October, then November 2021: reminder letters sent to headquarters;
– December 2021: end of collection.

No formal notice nor statement of non-response for this collection.

From the time the questionnaires were sent out until the end of the collection, a team of managers ensured contact and responded to requests from enterprises (answers to questions, granting of additional time, etc.). The data coding, imputation, adjustment, calibration and validation phase then took place until the data were sent to Eurostat on 7 July 2022.

7.2.1 Punctuality – delivery and publication

Not applicable

8. Coherence and comparability

8.1 Comparability – geographical

For LCS 2020, results by French regions are made according to the NUTS 1 region nomenclature, which is in use since 1st January 2018 and retrospectively applicable to data with reference periods back to 2016. In France, the current NUTS 1 regions thus correspond to the French administrative regions as redefined by the 2015 territorial reform. It should be noted that the 2016 LCS results were produced in a derogatory manner according to the former NUTS 1 region nomenclature (which corresponded in France to the former Zone for study and land planning – “Zone d’Etudes et d’Aménagement du Territoire” (ZEAT) in French). As a result, the regional breakdowns of the LCS 2016 and LCS 2020 results are not comparable.

8.1.1 Asymmetry for mirror flows statistics – coefficient

Not applicable

8.2 Comparability – over time

*** <u>Comparability between LCS 2020 survey and LCS 2016 survey</u>**

– Use of new questions and previously unused questions:

For D11111: the new question on other bonuses paid on a monthly basis is used (it was a calculation in 2016)

For D11112: the new question on other bonuses not paid on a monthly basis is used, to which are added the other elements of earnings not subject to social-security contributions (in 2016, it was calculated as the difference between total bonuses and seniority bonuses, bonuses linked to constraints, individual performances, collective performances and benefits in kind).

For D1114: the new question on benefits in kind is used (it was a calculation in 2016). Transport costs that were not taken into account in 2016 are also added.

For D1211: to the calculation made for the previous edition, we add the use of the new question on the amount of the social flat rate contributions (previously included in the total contributions). In addition, this heading no longer includes the employer's contributions for arduous work (deleted in 2018).

For D122: to the calculation made for the previous edition, we add the family salary supplement which was not taken into account in 2016.

– Specific issue on hours worked:

In the BTS, there is a break in the series on the contract durations between 2016 and 2020, linked to the switch from DADS to DSN (change in the underlying administrative source). Contract durations are now better measured, especially for short contracts, and on average revalued slightly downwards.

This break has a downward impact on the hours worked in LCS 2020 because, for employees who are paid at a flat daily rate, the calculation of these hours is based on the estimation of an average number of hours worked per day applied to the duration of the exercise (in days in the year) provided in the contract. The impact of this break on the evolution of total hours worked between 2016 and 2020 is a decrease of about 4 points.

– Changes in the treatments of temporary workers:

In the BTS, all employees of temporary work agencies are registered in the temporary work agency establishments. From Ecmo 2019 onwards, the number of employees in the company is calculated as the number of jobs (in the company) observed in the BTS file and no longer with the number of employees from the Sirus register.

In total, in division 78 (Employment activities), the number of establishments increases very strongly between 2016 and 2019, as does the number of employees. While part of the increase in the latter can be explained by the very strong growth in temporary work over the period, it can also be explained in part by the change in the accounting method mentioned above. The 2020 data for sector N – Administrative and support service activities – are therefore difficult to compare with the 2016 data.

– Other issues of attention:

The CICE (Tax Credit for Employment Competitiveness, "**C**rédit d'**I**mpôt **C**ompétitivité **E**mploi" in French) and the apprenticeship tax credit, which were subsidies recorded in D5 in LCS 2016, no longer exist in LCS 2020, as those two schemes were deleted on 1st January 2019. The CICE, which constituted the essential part of D5 in 2016, is transformed from this date into a reduction in social security contributions. This transformation therefore results in a huge drop in D5 subsidies between 2016 and 2020, and a similar drop in the amount of D12 contributions, and more precisely of statutory social-security contributions to be paid by employers D1211.

D12 is also heavily impacted by the health crisis of 2020:

- D121, and more specifically D1211, is mainly made up of social security contributions, which were subjected to reductions for some sectors (in particular sector I, accommodation and food service activities, and sector R, Arts, entertainment and recreation) in 2020;
- D122 is made up (among other things) of the part of the short-time working compensations compulsorily paid by the employer and not refunded by the public administration (as well as the additional part of the daily social security allowance paid by the employer in case of sick leave). With the extensive use of short-time working and the sharp increase in sick leave at the peak of the health crisis, this item is therefore much more important in 2020 than in 2016.

More generally, the increase in average hourly wages (or average hourly labour costs) between 2016 and 2020 is also partly, but more than usually, a reflection of changes in the composition of jobs and of the volume of work. Indeed, the distribution of the hourly volume of work of employees has been profoundly modified in 2020, and this in a temporary way: clerical, sale and service employees and industrial and blue-collar workers, who are among the lowest paid employees, have been more often concerned by short-time working, while managers, who are on average much better paid, have more often teleworked; moreover, the sectors most affected by activity restrictions are also the least remunerative (notably accommodation and food services). The evolution of the average hourly wage (and consequently of the average hourly labour cost) is therefore due, on the one hand, to these structural changes (*composition effect*) and, on the other hand, to the evolution of wages in each group of employees. For example, it is estimated that this composition effect of the volume of work contributes half of the increase in the average hourly wage between 2019 and 2020 (estimation based on Labour Cost Index – LCI – data).

8.2.1 Length of comparable time series

Not applicable

8.3 Coherence – cross domain

Analysis of consistency is presented in section 8.5.

8.4 Coherence – sub annual and annual statistics

Analysis of consistency is presented in section 8.5.

8.5 Coherence – National Accounts

Validations are based on comparisons of evolutions of the main aggregates obtained (hourly wages, hourly labour costs, contractual duration, hours paid and worked) with external sources: BTS (All Employee Database), LCI (Labour Cost Index), national accounts. Comparisons in terms of evolution between LCS 2016 and LCS 2020 are made here for validation purposes, but should be analysed with caution in view of all the elements specified in point 8.2.

The evolution of the variables between LCS 2016 and LCS 2020 is compared to the evolution of the variables with the "closest" concepts present in the external sources. It should be noted that the concepts and the scope do not completely overlap between the different sources. The main discrepancies are the following:

- *Scope*: the Ecmo survey covers companies with more than 10 employees, excluding employees of households/private individuals and the agriculture sector. Data calculated from the BTS are based on the same scope as that of Ecmo. On the other hand, other sources used here (LCI and national account) relate to the scope including companies with less than 10 employees;
- *Hours*: In the Ecmo survey, two types of hours are calculated: hours paid and hours worked, which are calculated on the basis of the number of annualised working days specified in the employment contract minus declared holidays and absences. An annual number of days worked is then deduced and converted into hours. In other sources, calculations are made only with hours paid. Usually, the

evolutions in hours paid and in hours worked are close, but in 2020 hours paid and hours worked may have evolved differently (temporary cessation of activity during the health crisis, but partial coverage of remuneration by the employer). Moreover, as indicated in section 8.2, a break in the series affects the hours worked in Ecmoss, which makes comparisons between 2016 and 2020 difficult;

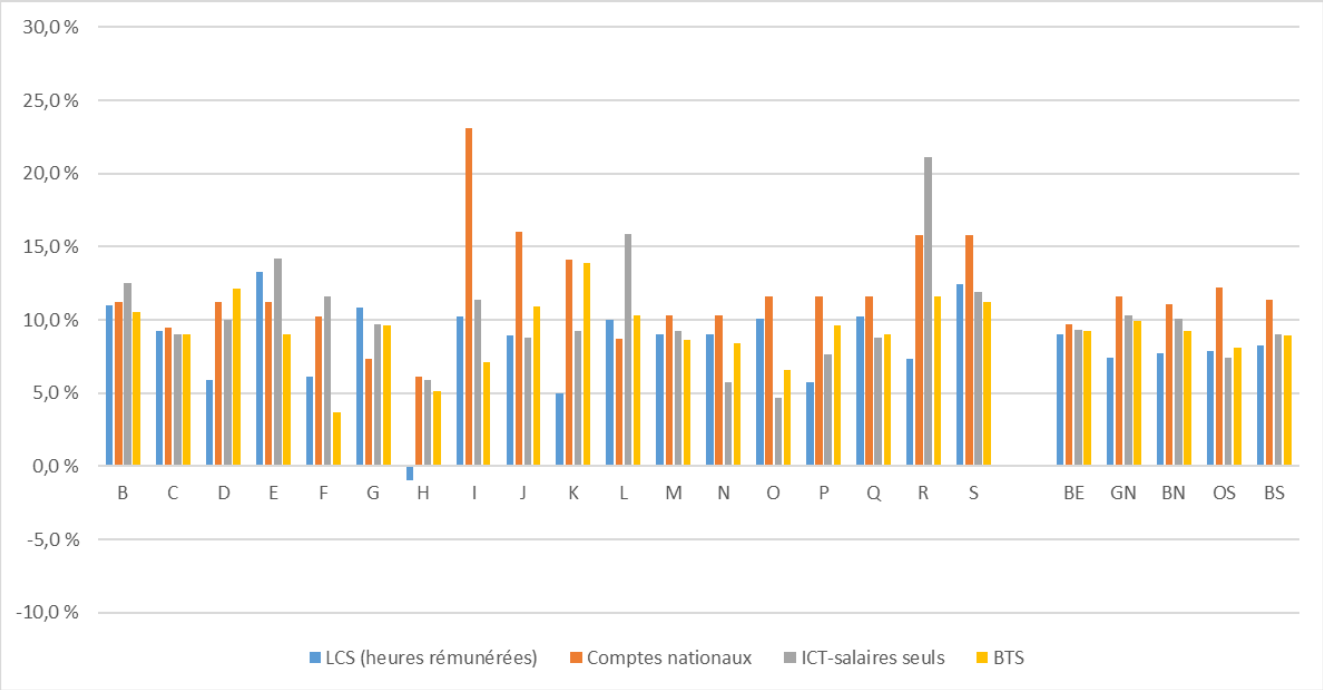
- *Classification of activity*: in the Ecmo survey (as in the LCI and the BTS), it is based on a concept of sector of activity (grouping of establishments according to their main activity) whereas in the national accounts it is based on a concept of branch (grouping of units of economic activity close to each other: one can therefore have several units of activity of the same company in different branches). This difference can therefore explain differences between sources (LCS, LCI, BTS versus National Accounts) at the level of the various activities but not at the overall level;
- *Concepts of wages and costs*:
  > In the national accounts, the calculated payroll includes larger concepts than those taken into account in the LCS (e.g. tips, earnings of majority managers of companies). These conceptual differences may explain discrepancies in some sections (e.g. accommodation, food service activities and construction). Beyond the payroll, the other components of labour costs are also measured using slightly different concepts between the LCS and national accounts. In the national accounts, the subsidies item deducted from labour costs includes, for example, production subsidies, and not only subsidies to the employment of workforce;
  > The LCI does not take into account remunerations outside the social contribution base (i.e. exempt from social security contributions but not from CSG-CRDS) such as employee savings schemes;
  > Some cost elements are not measured regularly in the LCI. This is the case for subsidies (D5), imputed social contributions (D122), taxes and recruitment costs (D3 and D4) as well as a part of collectively agreed, contractual and voluntary social security contributions to be paid by the employer (D1212). These elements are taken from the LCS and incorporated ex-post into the labour cost index.

*** Comparison of hourly wages and labour costs**

Two types of hourly wages and labour costs can be calculated: relative to hours worked (LCS only) or relative to hours paid (LCS, LCI, National Accounts, BTS). Comparisons can be made between the different sources on the second indicator.

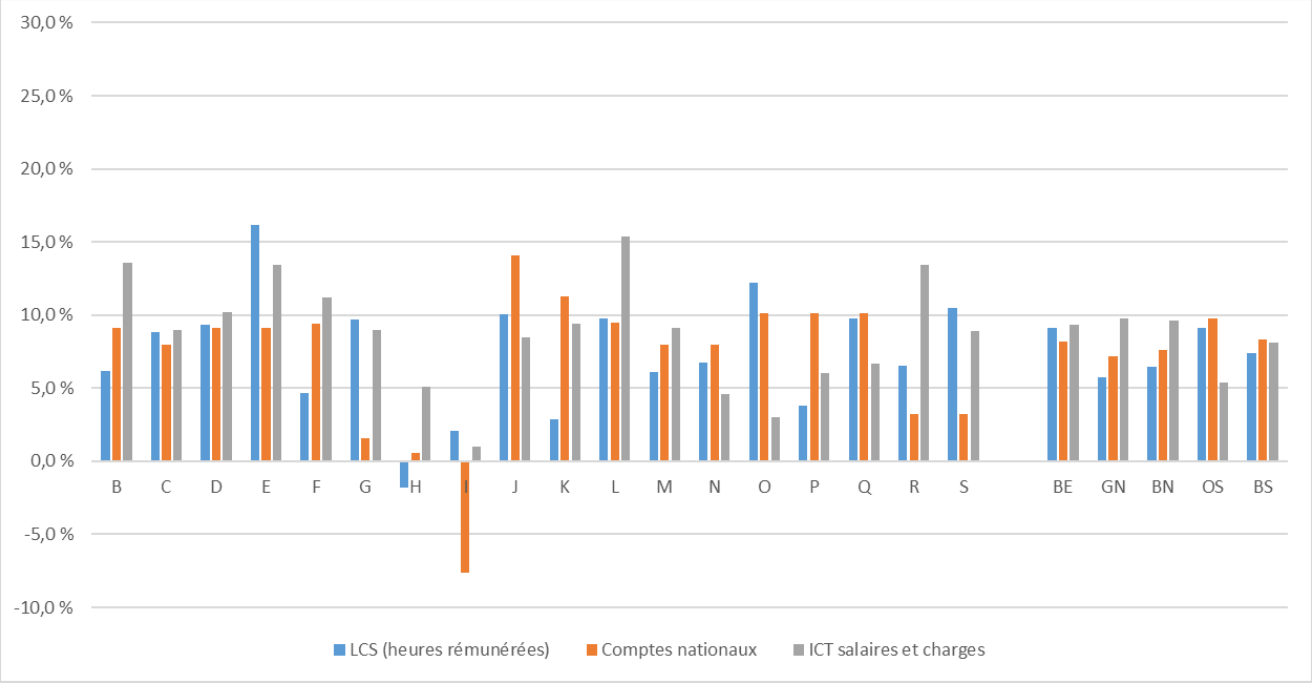
Figures 1 and 2 show the evolution between 2016 and 2020, respectively in hourly wages and hourly labour costs by sectoral section in LCS but also in other sources when data are available: LCI and National Accounts for wages and labour costs and BTS for wages only (labour cost components other than gross wages are not available in BTS).

Figure 1 − Evolution of hourly wage between 2016 and 2020 in LCS, LCI-wages and salaries, National Accounts and BTS



Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers for LCS et BTS.
Note: LCS (heures rémunérées) = LCS (hours paid); Comptes nationaux = National Accounts; ICT-Salaires seuls = LCI-wages and salaries
Sources: Labour Cost Survey (LCS), Labour Cost Index (LCI), National Accounts, BTS 2016 et 2020

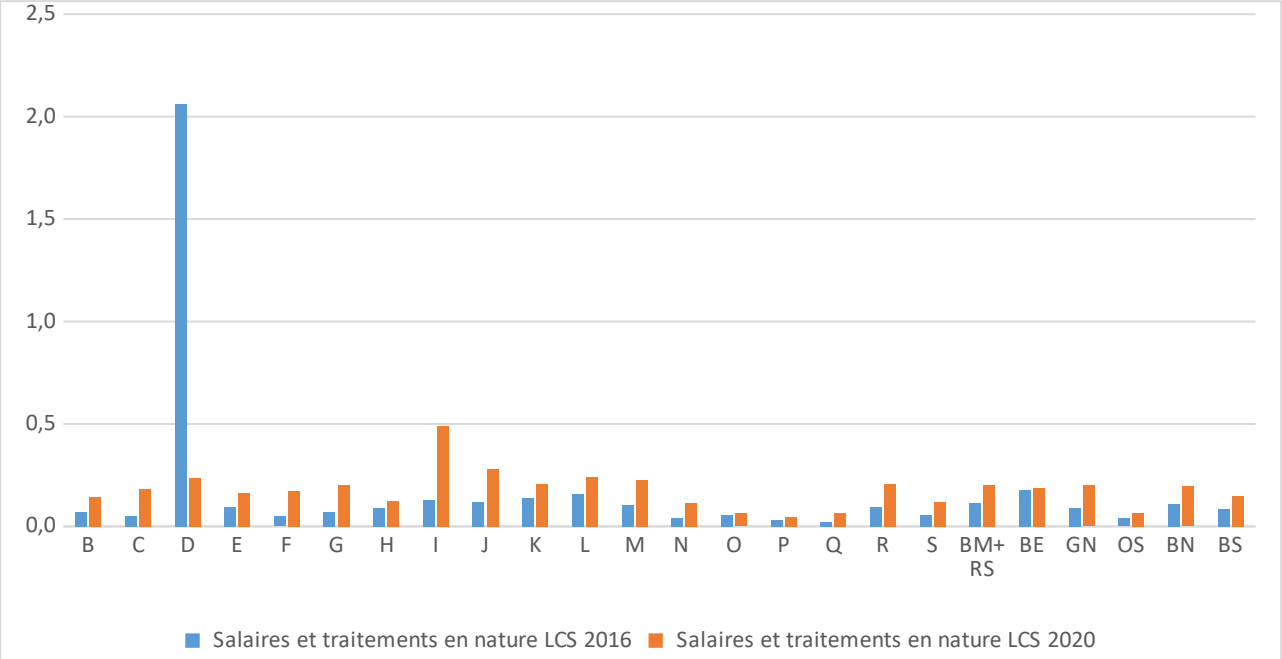
Figure 2 − Evolution of hourly labour cost between 2016 and 2020 in LCS, LCI-total labour cost, National Accounts



Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers for LCS.
Note: LCS (heures rémunérées) = LCS (hours paid); Comptes nationaux = National Accounts; ICT-Salaires et Charges = LCI-Total labour costs
Sources: Labour Cost Survey (LCS), Labour Cost Index (LCI), National Accounts 2016 et 2020

If we compare the data in relation to hours paid (comparable hours between 2016 and 2020), we can see that the evolutions at the aggregate level are relatively similar between the sources. At the sectoral section level, there are some discrepancies in some values, but the analysis of the micro data does not reveal any obvious problems in the data; on the other hand, the evolutions between the other sources (national accounts, BTS and LCI) are also not always perfectly in line; these few discrepancies are mainly related to the differences (in terms of scope, concept, etc.) between the sources mentioned above.
In sector D (Electricity, Gas, Steam and Air Conditioning Supply), however, there is an increase in hourly wages between 2016 and 2020 in LCS which is smaller than in the other sources: this is explained by a decrease in benefits in kind (D1114), which are well taken into account in LCS. Figure 3 shows wages and salaries in kind (D1114) related to hours paid in LCS 2016 and 2020. It highlights a measurement error for benefits in kind in LCS 2016 (where they were deducted by balance, whereas in LCS 2020 they are directly measured using a question in the Ecmo survey questionnaire).

Figure 3 – Ratio between wages and salaries in kind (D1114) and hours paid in LCS in 2016 and 2020 (in euros)

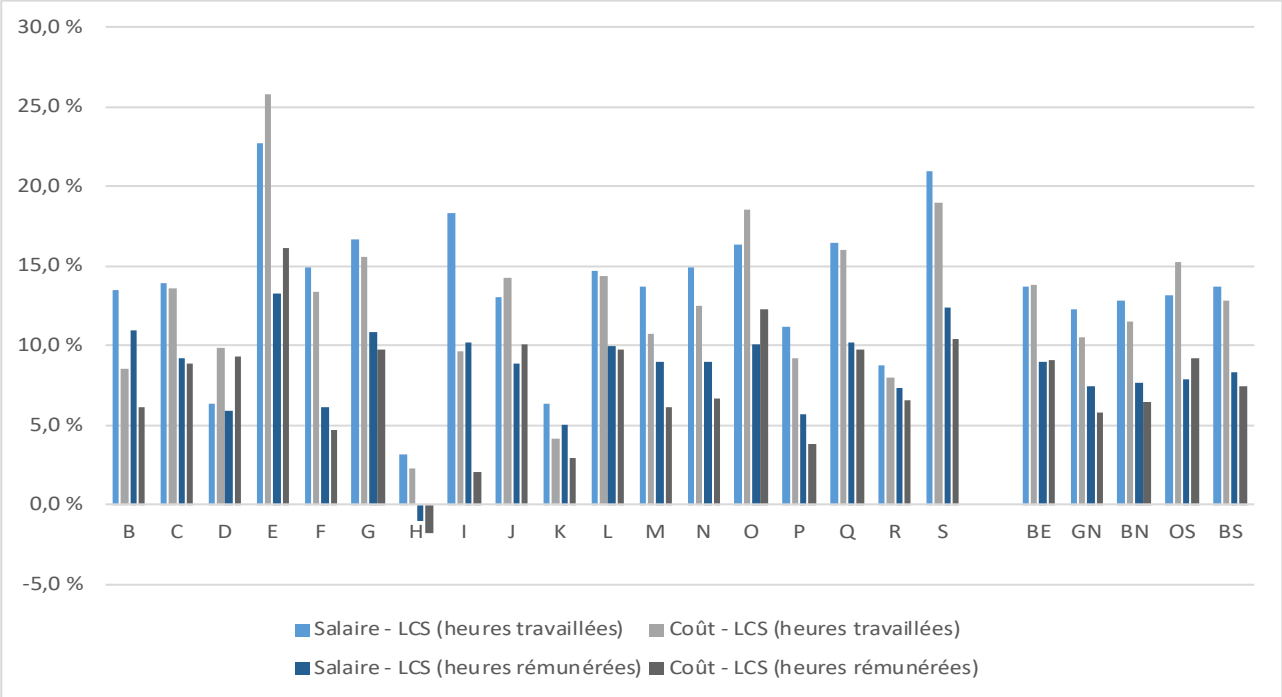


Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers.
Note: Salaires et traitements en nature = wages and salaries in kind
Sources: Labour Cost Survey (LCS) 2016 et 2020

Other sectors show different evolutions of hourly labour costs or wages depending on the source, for example in sectors H or K (less dynamic in LCS than in the other sources ; H = Transportation and Storage ; K = Financial and Insurance Activities). In contrast to sector D, an examination of the information at micro level shows no obvious error or particularly aberrant or highly contributory data in these sectors.
The downward trend in social contributions in sector I (Accommodation and food service activities) in 2020 remains lower in absolute terms in LCS than that observed in LCI- labour costs other than wages and salaries, despite the mass correction made in this sector (see section 6.3.3). Concerning the measurement of total labour costs as a whole, the trends observed in these two sources are nevertheless comparable for sector I; the trend observed in the national accounts for this same sector is clearly lower, but it includes production subsidies not included in the LCI or LCS.

The evolution of the indicators is more dynamic when related to hours worked (only in LCS, Figure 4); this is explained in particular by the break in series observed on the hours worked variable (see point 8.2).

Figure 4 – Evolution of hourly wages and hourly labour costs (hours worked and paid) between 2016 and 2020 in LCS

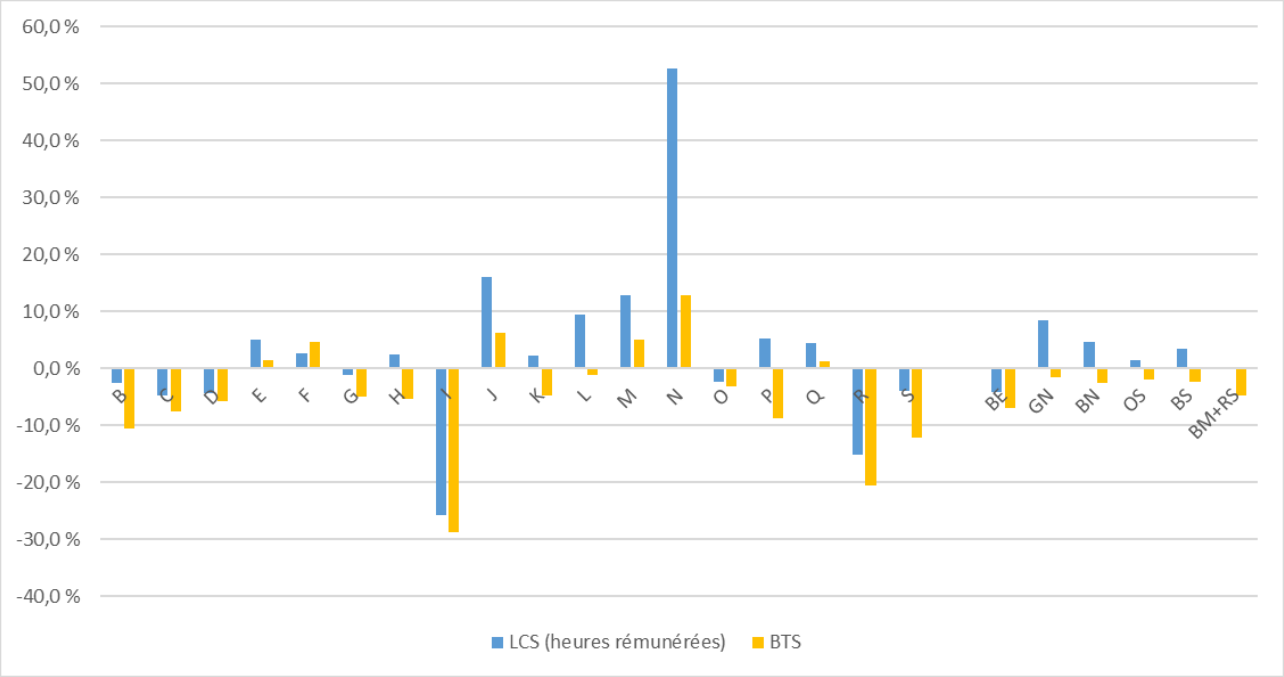


Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers.
Note: Salaire = Wages and salaries; Coût = Total Labour Cost; heures travaillées = worked hours; heures rémunérées = paid hours
Sources: Labour Cost Survey (LCS) 2016 et 2020

*** Comparison of hours paid**

The evolution of hours paid observed in LCS and BTS is provided in Figure 5. It is recalled that the data for sector N are not comparable for LCS between 2016 and 2020 (see section 8.2).

Figure 5 – Evolution of hours paid between 2016 et 2020 in LCS and BTS

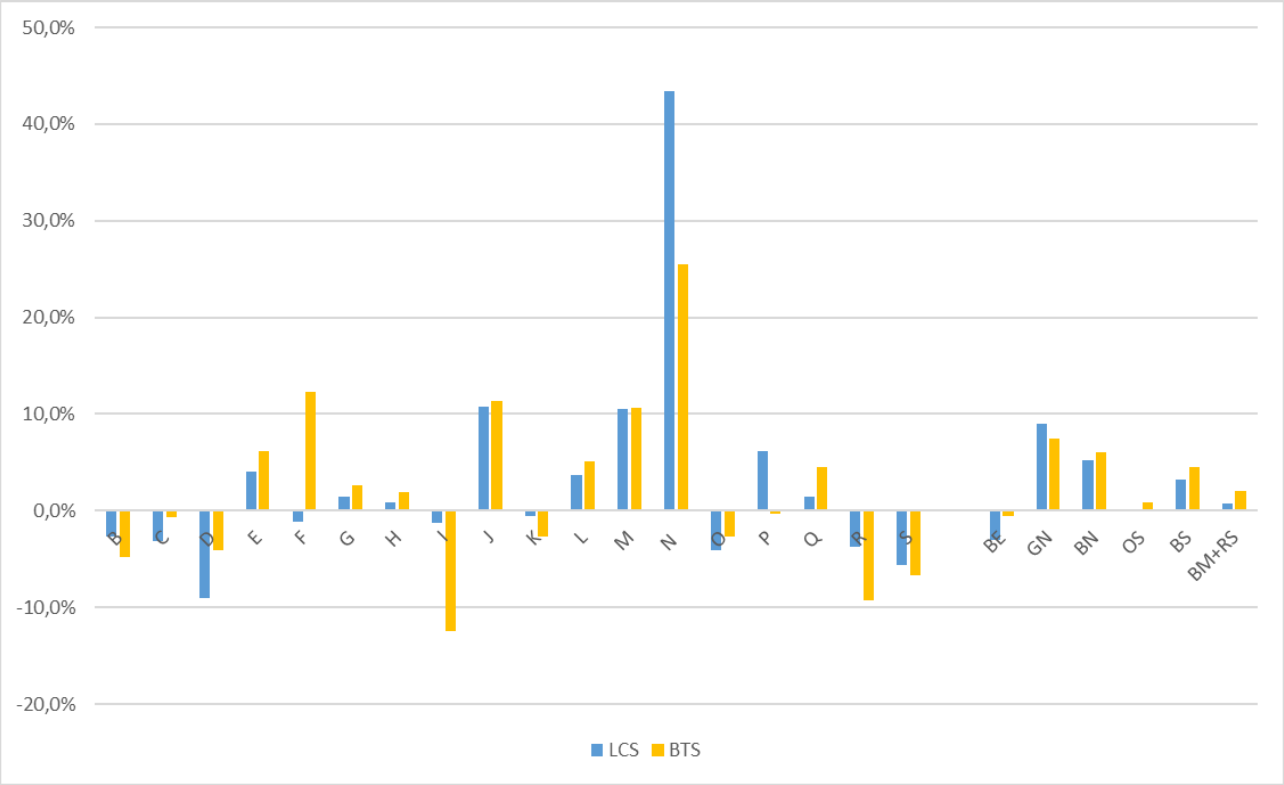


Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers.
Note : heures rémunérées = paid hours
Sources: Labour Cost Survey (LCS), BTS 2016 et 2020

*** Comparison of workforce**

The evolution of the number of employees, counted in physical persons, observed in LCS and BTS is provided in Figure 6. It should be noted that the data for sector N are not comparable for LCS between 2016 and 2020 (see point 8.2).

Figure 6 – Evolution of the workforce (in physical persons) between 2016 and 2020 in LCS and BTS



Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers.
Sources: Labour Cost Survey (LCS), BTS 2016 et 2020

8.6 Coherence – internal

The comparison between the LCS 2016 and 2020 is made on a comparable basis: here, on the scope France (excluding Mayotte), private + public.

In the non-agricultural market sector (sectors B to N), the hourly wage and the hourly labour cost per hour worked increased by 12.8% and 11.5% respectively between 2016 and 2020 (Table 3). However, comparisons in terms of trends should be analysed with caution, given all the elements specified in point 8.2.

Table 3 − Evolution of hourly wages and costs in LCS between 2016 and 2020 (in hours worked)

	Wage (D11) per hour worked			Cost per hour worked		
	2016	2020	Evolution	2016	2020	Evolution
Mining and quarrying (B)	23,3	26,5	13,5 %	35,7	38,8	8,5 %
Manufacturing (C)	24,7	28,1	13,9 %	36,4	41,3	13,6 %
Electricity, gas, steam and air conditioning supply (D)	35,6	37,9	6,4 %	49,0	53,8	9,8 %
Water supply; sewerage, waste management and remediation activities (E)	21,2	26,0	22,7 %	30,7	38,6	25,8 %
Construction (F)	21,9	25,2	14,9 %	31,1	35,2	13,4 %
Wholesale and retail trade (G)	20,6	24,1	16,7 %	29,6	34,2	15,6 %
Transportation and storage (H)	22,4	23,1	3,2 %	31,4	32,1	2,3 %
Accommodation and food service activities (I)	15,4	18,2	18,3 %	21,7	23,8	9,7 %
Information et communication (J)	31,2	35,3	13,0 %	45,6	52,0	14,2 %
Financial and insurance activities (K)	37,3	39,7	6,4 %	57,9	60,3	4,2 %
Real estate activities (L)	24,6	28,2	14,7 %	37,6	43,0	14,4 %
Professional, scientific and technical activities (M)	30,7	34,9	13,7 %	45,7	50,6	10,7 %
Administrative and support service activities (N)	17,7	20,3	14,9 %	24,9	28,0	12,5 %
Public administration and defence; compulsory social security (O)	20,6	23,9	16,3 %	32,2	38,2	18,5 %
Education (P)	23,6	26,3	11,2 %	41,5	45,3	9,2 %
Human health and social work activities (Q)	19,5	22,6	16,4 %	29,7	34,4	16,0 %
Arts, entertainment and recreation (R)	24,3	26,4	8,8 %	35,3	38,1	8,0 %
Other service activities (S)	19,4	23,4	21,0 %	28,8	34,3	19,0 %
Industry (except construction) (BE)	**25,1**	**28,6**	**13,7 %**	**36,8**	**41,9**	**13,8 %**
Construction (F)	21,9	25,2	14,9 %	31,1	35,2	13,4 %
Services of the business economy (GN)	**24,0**	**27,0**	**12,3 %**	**35,0**	**38,7**	**10,6 %**
Wholesale and retail trade (G)	20,6	24,1	16,7 %	29,6	34,2	15,6 %
Business economy (BN)	**24,1**	**27,2**	**12,8 %**	**35,1**	**39,2**	**11,5 %**
Non-market services (OQ)	**20,7**	**23,8**	**15,1 %**	**33,0**	**38,0**	**15,2 %**
All (BS)	**22,9**	**26,0**	**13,7 %**	**34,3**	**38,7**	**12,8 %**

Scope: France excluding Mayotte, including apprentices, sections B to S of NACE rév. 2, excluding companies with less than 10 employees and private employers.
Sources: Labour Cost Survey (LCS) 2016 et 2020

9. Accessibility and clarity

9.1 News release

Not applicable

9.2 Publication

First national publication produced by INSEE were published at the end of 2022 or at the beginning of 2023 (“Insee-Résultats” containing tables of very detailed results, published on 3/11/2022, “Insee-Focus” publication released on 4 January 2023) and those produced by DARES (Ministry of Labour) should be published in 2023 (Dares-Analyses).

9.3 On-line database

Data are available and can be consulted on the Eurostat website.

9.3.1 Data tables – consultations

Not applicable

9.4 Micro-data access

A file of anonymised individual LCS 2020 data for France will be made available to researchers via the Eurostat data center.

At INSEE, different individuals files are made available:

- Each annual Ecmo survey is made available to the Public Statistical Service (INSEE and the ministerial statistical services) for statistical purposes;
- Production and Research Files at the "employee" level for the Ecmo are made available to researchers via the Quételet center; not only are these files anonymised, but in order to guarantee confidentiality as much as possible, some variables are not available or provided at an “aggregated” format (more aggregated level of the nomenclature, for example for the sector of activity). More complete files are also made available to researchers via the CASD (Remote Secure Data Access Centre, a French "datacenter" ; **“C**entre d’**A**ccès **S**écurisé à distance aux **D**onnées” in French) and after the agreement of the French Statistical Confidentiality Committee.

Those files will be available in 2023.

9.5 Other

Detailed tables on labour costs are available on the Insee website since November 2022 (“Insee-Résultats”) and accompany publications mentioned in section 9.2.

9.6 Documentation on methodology

The Ecmo surveys are part of the Ecmoss system (which combines the ESS structure of earnings survey and the Ecmo labour cost survey); this system is described on the Insee website (https://www.insee.fr/fr/metadonnees/source/serie/s1221 in French, https://www.insee.fr/en/metadonnees/source/serie/s1221 in English) and on the National Council for Statistical Information (CNIS) (see section 9.7).

9.7 Quality documentation

Opinions of opportunity and labels of general interest and statistical quality as well as the granting of mandatory status delivered by the Label Committee can be consulted on the CNIS website.

For the Ecmo 2019 and Ecmo 2020 surveys:
https://www.cnis.fr/enquetes/cout-de-la-main-doeuvre-et-la-structure-des-salaires-ecmoss-cycle-quadriennal-2018-2021-enquete-sur-le-2021a026ec/

9.7.1 Metadata – consultations

Not applicable

9.7.2 Metadata completeness – rate

Not applicable

10. Cost and Burden

In Ecmo, establishments are surveyed for an average of 9 employees. The average response time is estimated at 1 hour and 40 minutes for the establishment questionnaire and 17 minutes per employee questionnaire.

11. Confidentiality

The data from the Ecmo surveys are protected by statistical secrecy and are intended for INSEE and DARES (the statistical service of the Ministry of Labour). These responses, as well as the data obtained by matching, are kept for 5 years from the end of the collection for the purposes of the survey. They will be archived beyond this period. At all times, their use and access are strictly controlled and limited to the compilation of statistics or to scientific or historical research.
The General Regulation 2016/679 of the European Parliament and of the Council of 27 April 2016 on data protection (RGPD) as well as the (French) law n°78-17 of 6 January 1978 on data processing, files and freedoms apply to these surveys. For personal data, a right of access, rectification, deletion or limitation of processing may be exercised during the 6-month retention period for identification data.

11.1 Confidentiality – policy

Published results comply with the rules of statistical confidentiality.

11.2 Confidentiality – data treatment

Not applicable

12. Comment

Nothing to report