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March 2019

EMPLOYMENT AND UNEMPLOYMENT

Provisional data

- In March 2019, the number of employed people increased compared with February (+0.3%, +60 thousand); the employment rate rose to 58.9% (+0.2 percentage points). The increase of employment involved men and women and people aged 15-34 years (+69 thousand); rather stable the 35-49 years, while over 50 declined (-14 thousand).
- The number of unemployed persons fell by 3.5% (-96 thousand); the decline involved men and women and all age classes. The unemployment rate dropped to 10.2% (-0.4 percentage points), the youth rate decreased to 30.2% (-1.6 percentage points).
- In March, inactive people aged 15-64 remained substantially stable as result of the decrease among people aged 15-34 and the increase for over 35. The inactivity rate was unchanged at 34.3% for the third consecutive month.
- In the period from January to March 2019, employment rose compared with the previous quarter (+0.2%, +46 thousand), even by gender.
- In the last quarter, the rise of employment was accompanied by the drop of unemployed persons (-1.8%, -50 thousand) and inactive people aged 15-64 years (-0.1%, -18 thousand).
- Employment rose by 0.5% (+114 thousand) compared with March 2018. The increase concerned men and women, young people aged 15-24 years (+63 thousand) and over 50 (+210 thousand).
- On a yearly basis, the growth of employment was accompanied by the fall of unemployed persons (-7.3%, -208 thousand) and inactive people aged 15-64 (-0.3%, -35 thousand).

TABLE 1. EMPLOYMENT, UNEMPLOYMENT AND INACTIVITY RATES BY GENDER
March 2019, seasonally adjusted data

	Percentage values	Months on previous months		Month on same month a year ago
		Percentage points		
		mar19 feb19	jan-mar19 oct-dec18	mar19 mar18
MALES				
Employment rate (aged 15-64)	68.0	+0.3	+0.2	+0.4
Unemployment rate	9.4	-0.3	-0.2	-0.5
Inactivity rate (aged 15-64)	24.8	0.0	-0.1	0.0
FEMALES				
Employment rate (aged 15-64)	49.8	+0.2	+0.1	+0.5
Unemployment rate	11.3	-0.4	-0.2	-1.1
Inactivity rate (aged 15-64)	43.8	0.0	0.0	+0.1
TOTAL				
Employment rate (aged 15-64)	58.9	+0.2	+0.1	+0.5
Unemployment rate	10.2	-0.4	-0.2	-0.8
Inactivity rate (aged 15-64)	34.3	0.0	0.0	0.0

CHART 1. EMPLOYED

January 2014 – March 2019, absolute values in millions, seasonally adjusted data

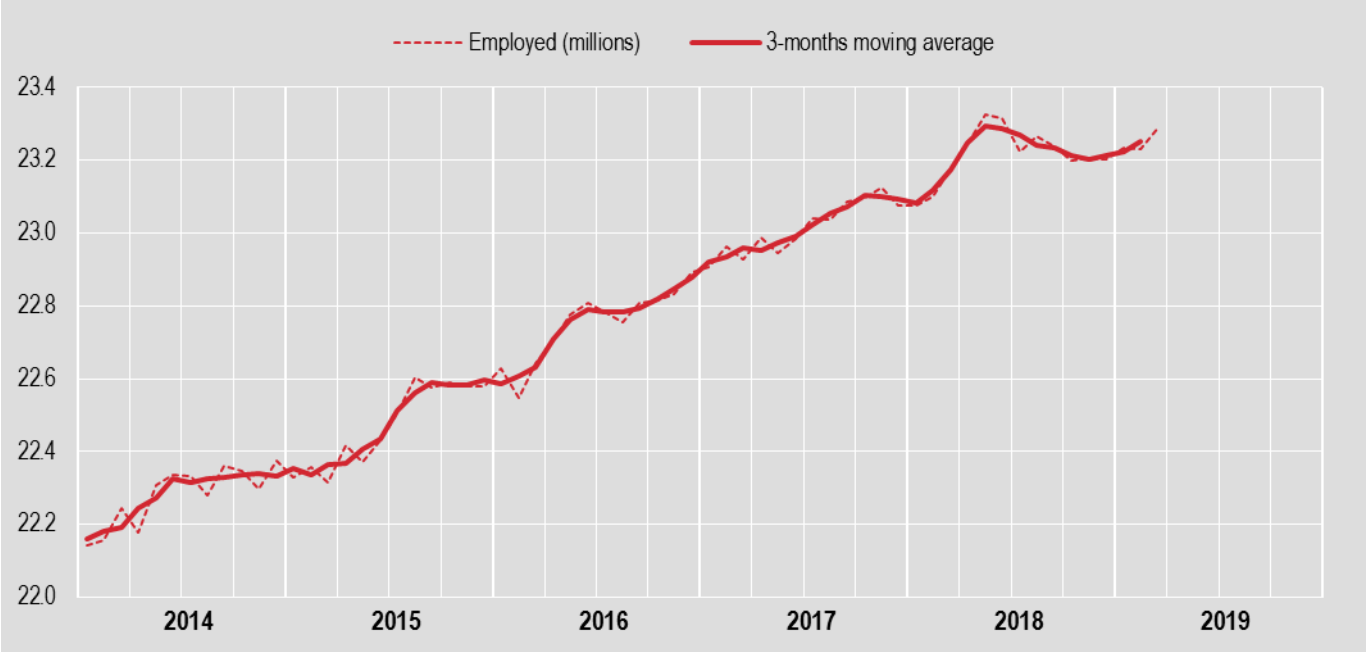

CHART 2. UNEMPLOYMENT RATE

January 2014 – March 2019, percentage values, seasonally adjusted data

CHART 3. INACTIVE POPULATION AGED 15-64

January 2014 – March 2019, absolute values in millions, seasonally adjusted data

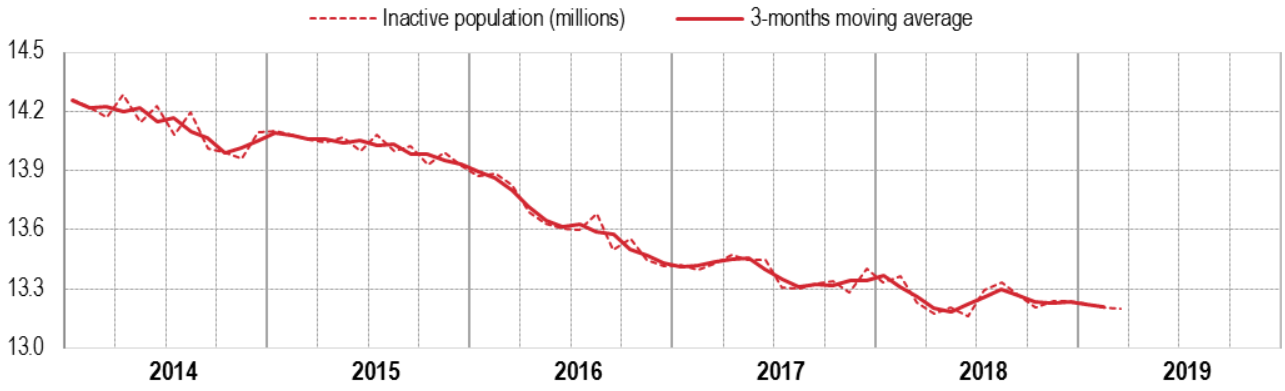

TABLE 2. POPULATION BY GENDER AND EMPLOYMENT STATUS

March 2019, seasonally adjusted data

	Absolute values (thousands)	Months on previous months				Month on same month a year ago	
		mar19 feb19 (absolute)	mar19 feb19 (percentage)	jan-mar19 oct-dec18 (absolute)	jan-mar19 oct-dec18 (percentage)	mar19 mar18 (absolute)	mar19 mar18 (percentage)
MALES							
Employed	13,495	+31	+0.2	+38	+0.3	+44	+0.3
Unemployed	1,396	-48	-3.3	-28	-1.9	-78	-5.3
Inactive (aged 15-64)	4,753	-7	-0.1	-15	-0.3	-15	-0.3
FEMALES							
Employed	9,796	+29	+0.3	+8	+0.1	+71	+0.7
Unemployed	1,246	-47	-3.7	-22	-1.7	-130	-9.5
Inactive (aged 15-64)	8,444	0	0.0	-3	0.0	-21	-0.2
TOTAL							
Employed	23,291	+60	+0.3	+46	+0.2	+114	+0.5
Unemployed	2,641	-96	-3.5	-50	-1.8	-208	-7.3
Inactive (aged 15-64)	13,197	-6	0.0	-18	-0.1	-35	-0.3

TABLE 3. POPULATION BY AGE GROUP AND EMPLOYMENT STATUS

March 2019, seasonally adjusted data

	Absolute values (thousands)	Months on previous months				Month on same month a year ago	
		mar19 feb19 (absolute)	mar19 feb19 (percentage)	jan-mar19 oct-dec18 (absolute)	jan-mar19 oct-dec18 (percentage)	mar19 mar18 (absolute)	mar19 mar18 (percentage)
AGED 15-24							
Employed	1,093	+51	+4.9	+17	+1.6	+63	+6.2
Unemployed	473	-13	-2.8	-13	-2.7	-27	-5.5
Inactive	4,300	-40	-0.9	-6	-0.1	-29	-0.7
AGED 25-34							
Employed	4,101	+18	+0.4	+34	+0.8	-8	-0.2
Unemployed	732	-9	-1.3	-28	-3.6	-47	-6.1
Inactive	1,722	-13	-0.7	-20	-1.1	-21	-1.2
AGED 35-49							
Employed	9,514	+5	0.0	-58	-0.6	-150	-1.6
Unemployed	894	-47	-5.0	-4	-0.4	-121	-11.9
Inactive	2,536	+16	+0.6	-10	-0.4	-30	-1.1
AGED 50 AND OVER							
Employed	8,582	-14	-0.2	+53	+0.6	+210	+2.5
Unemployed	541	-26	-4.6	-6	-1.0	-13	-2.3
Inactive	17,525	+66	+0.4	+48	+0.3	+136	+0.8
Inactive aged 50-64	4,639	+31	+0.7	+18	+0.4	+44	+1.0

TABLE 4. EMPLOYMENT, UNEMPLOYMENT AND INACTIVITY RATES BY AGE GROUP

March 2019, seasonally adjusted data

	Percentage values	Months on previous months		Month on same month a year ago
		Percentage points		
		mar19 / feb19	jan-mar19 / oct-dec18	mar19 / mar18
AGED 15-24				
Employment rate	18.6	+0.9	+0.3	+1.1
Unemployment rate	30.2	-1.6	-0.9	-2.5
Unemployment ratio	8.1	-0.2	-0.2	-0.5
Inactivity rate	73.3	-0.7	-0.1	-0.6
AGED 25-34				
Employment rate	62.6	+0.3	+0.6	+0.6
Unemployment rate	15.1	-0.2	-0.6	-0.8
Unemployment ratio	11.2	-0.1	-0.4	-0.6
Inactivity rate	26.3	-0.2	-0.2	0.0
AGED 35-49				
Employment rate	73.5	+0.2	0.0	+0.5
Unemployment rate	8.6	-0.4	0.0	-0.9
Unemployment ratio	6.9	-0.3	0.0	-0.8
Inactivity rate	19.6	+0.2	0.0	+0.2
AGED 50-64				
Employment rate	60.6	0.0	+0.1	+0.4
Unemployment rate	6.3	-0.3	-0.1	-0.3
Unemployment ratio	4.0	-0.2	-0.1	-0.2
Inactivity rate	35.4	+0.2	0.0	-0.3

TABLE 5. EMPLOYED, UNEMPLOYED, INACTIVE POPULATION, EMPLOYMENT, UNEMPLOYMENT AND INACTIVITY RATES

February 2018 - February 2019, revisions of month on previous month changes

YEAR	MONTH	Employed	Unemployed	Inactive population aged 15-64	Employment rate aged 15-64	Unemployment rate	Inactivity rate aged 15-64
2018	February	0.0	-0.1	0.0	0.0	0.0	0.0
	March	-0.1	+0.9	-0.1	0.0	+0.1	0.0
	April	0.0	-0.5	0.0	0.0	-0.1	0.0
	May	0.0	0.0	0.0	0.0	0.0	0.0
	June	0.0	-0.1	0.0	0.0	0.0	0.0
	July	0.0	-0.1	0.0	0.0	0.0	0.0
	August	0.0	-0.1	0.0	0.0	0.0	0.0
	September	0.0	-0.1	0.0	0.0	0.0	0.0
	October	0.0	-0.2	0.0	0.0	0.0	0.0
	November	0.0	-0.2	0.0	0.0	0.0	0.0
	December	0.0	+0.1	0.0	0.0	0.0	0.0
2019	January	0.0	-0.5	+0.1	0.0	0.0	0.0
	February	+0.1	-0.2	-0.1	0.0	0.0	0.0

Labour force: comprises employed and unemployed persons.

Employed persons: comprise persons aged 15 and over who, during the reference week:

- worked for at least one hour for pay or profit;
- worked for at least one hour as contributing family workers, even if unpaid;
- were temporarily absent from work (for instance due to holidays or sick leave). Employees are classified as employed if the total duration of the absence period is 3 months or less, or if they receive at least 50% of the wage. Self-employed (excluding contributing unpaid family workers) are classified as employed if they maintain their business. Contributing unpaid family workers are classified as employed if the total duration of the absence period is 3 months or less.

Unemployed persons: comprise persons aged 15-74 who:

- were actively seeking work, i.e. had carried out activities in the four week period ending with the reference week to seek paid employment or self-employment and were available to start working before the end of the two weeks following the reference week;
- already found a job starting within three months from the end of the reference week and would be available to start working before the end of the two weeks following the reference week (whenever it was possible).

Inactive persons (persons outside the labour force)*:* comprise persons that are not classified in the labour force, that is persons not classified neither employed nor unemployed.

Employment rate: the percentage of employed persons in relation to the corresponding total population.

Unemployment rate: the percentage of unemployed persons in relation to the corresponding labour force.

Inactivity rate: the percentage of inactive persons in relation to the corresponding total population.

Seasonally adjusted data: data from which, using specific statistical methods, the effects of recurring seasonal influences (due to meteorological factors, customs, legislation, etc.) and calendar effects (if significant) have been removed. This treatment of a time series is needed to analyze the short-term changes of an indicator.

Months on previous months: change compared with the previous month (quarter).

Month on same month a year ago: change compared with the same month a year ago.

Reference week: week to which the collected information are referred.

Methodological note

Introduction and regulatory framework

The Labour force survey is a sample inquiry conducted through interviews on households, and its main goal is to estimate the main aggregates of the labour supply, employed and unemployed.

The main characteristics of the survey, from methodological aspects to the definition of the variables and indicators, are harmonised at the European level, and consistent with the international standards defined by the ILO, and are defined by specific regulations of the Council and of the European Commission. The regulation implementing a harmonised sample survey on the labour force of the European Union countries is Regulation No 577/98 of the European Council; Regulation No 1897/2000 of the European Commission provides the definition of unemployment and the principles for the formulation of the questions needed to identify the employed or unemployed persons; following EU regulations define in detail the survey variables.

The survey is inserted in the National Statistical Program (edition in force: NSP 2017-2019) approved by the Decree of the President of the Republic of 31 January 2018, published in the Official Journal - general series - no. 66 of 20 March 2018 – Ordinary Annex no. 12).

Reference population, survey and analysis unit

The reference population is composed by all the individuals aged 15 and older, belonging to de facto households whose head resides in the selected municipality. Therefore, members who permanently live together, including hospices, children's homes, religious institutes, barracks, etc. are excluded from the reference population.

The survey unit is the de facto household, defined as a group of co-habiting people with residence in the same municipality, linked by bonds of marriage, family relation, kinship, adoption, supervision or affective relationships.

The unit of analysis of the monthly Employment and Unemployment press release is each individual of 15 years of age or more (statistics using the family as the unit of analysis are also produced on an annual basis).

Sample design

The sample design is a two stages one, respectively of municipalities and households, with a stratification of first stage units. All municipalities with populations above a pre-defined level for each province, known as self-representative, are present in the sample with a probability equal to one. Municipalities whose populations are below the aforementioned thresholds, known as non-self-representative, are grouped into strata. They enter in the sample through a random selection mechanism that provides the extraction of one non-self-representative municipality from each stratum. For each sample municipality, a simple random sample of households is selected from the civil registry list.

From the third quarter of 2012, a new sampling design was introduced, that provided the update of the stratification information, and the introduction of a random rotation of sample municipalities.

Since January 2004, the survey is continuous, that is, the information is collected with reference to all the weeks of each quarter. The quarterly sample is uniformely divided between the three months, taking into account the number of weeks that compose each month (respectively 4 or 5). The reference month is composed of weeks, from Monday to Sunday, that occur for at least four days in the calendar month.

Each household is interviewed for two consecutive quarters, temporarily leaves the sample for the two successive quarters, then is interviewed again for other two quarters. That means that approximately 50% of the households are interviewed again after 3 months, and 50% after 12 months, except for non-response. In total, each household remains in the sample for a period of 15 months. Considering that the transition probabilities from inactivity to labour force of individuals above 74 years of age are negligible, to reduce statistical burden on this target population, from 1 January 2011, households composed by only inactive persons older than 74 years of age are not interviewed again.

Data collection

The interview is conducted through a CAPI (*Computer assisted personal interview*) and CATI (*Computer assisted telephone interview*) mixed technique. The first interview of each household is conducted with the CAPI technique, while subsequent interviews are conducted with the CATI technique (except for families without telephone or with a foreign family head). In general, the interview is conducted in the week following the reference week or, less frequently, in the three following weeks.

Certain survey questions, due to the difficulty in the response or the sensitivity of the subject, provide the right not to respond.

Further information on the Labour force survey, and the questionnaire used to collect the data are available at the following link: http://www.istat.it/it/archivio/8263.

Data processing: framework, tools and techniques

The month of March 2019 runs from Monday 4 March to Sunday 31 March 2019.

The estimator used for the production of monthly estimates is the *regression composite estimator*[1]. It is an estimator that may be effectively used in case of longitudinal surveys with partially overlapping sample, and that, using the longitudinal component, improves the efficiency of both the level estimates and the estimates of variations between months.

To properly analyse the data in the short-term, all the monthly data reported in the press release are subject to a monthly seasonal adjustment procedure, always including the latest available data, and updating the estimate of the models. With reference to only seasonally-adjusted data, therefore, variations in previously consolidated months could occur (whose non-seasonally-adjusted estimates have become definitive), which arise from the replication of the seasonal adjustment procedure with the addition of the latest available data.

The TRAMO-SEATS algorithm is adopted for the seasonal adjustment procedure, since January 2019 the version implemented in the software JDemetra+ is used.

The level figures of the survey, processed in units, are rounded-off to the thousands in the absolute values and variations. The variations are calculated on unit data, and not on data rounded-off to the thousands. In the percentage variations and rates, as well as in the differences in percentage points, values are rounded-off to the first decimal. The variations in percentage points between the rates are calculated on the rates with all the decimals before being rounded[2].

Output: main measures of analysis

The labour force survey aims to produce estimates on participation in the labour market.

The reference population is divided into three comprehensive and mutually exclusive groups[3]: employed persons, consistently with ILO standards, are composed of people who have performed at least one hour of paid work in the reference week (in addition to people absent from work in that week); unemployed persons (or persons in search of employment), who actively seek employment and would be available to begin working; inactive persons (or non-labour force), who do not work and are not seeking employment (or would not be available to begin work), for example, because they are involved in studying activities, retired or devoted to the care of their home and/or family[4]. Employed and unemployed persons together, constitute the labour force, that is the part of the population active in the labour market.

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[1] Singh, Kennedy and Wu (2001) *Regression composite estimation for the Canadian labour force survey with a rotating panel design*, Survey Methodology 27, 33-44.

[2] For example, in the current press release, the unemployment rate in March 2019 is equal to 10.18506, which comes to 10.2 when rounded-off. The unemployment rate in February 2019 was 10.,53955 and it is reported in the monthly time series attached to the press release as 10.5 (Table 1, page 5). The difference between the March and February 2019 data is, therefore -0.35449. Given the rounding-off rules, in Table 1, the variation is indicated as equal to -0.4 percentage points, and not -0.3 points, as it would be if considering the difference between the two already rounded rates.

[3] Because of the increased age of compulsory schooling (Law 296/2006), from the first quarter of 2007, data on individuals of 15 years of age contains neither employed or unemployed persons. The number of fifteen-year-old employed persons, or of those seeking employment, is traditionally completely negligible. The regulatory change therefore does not lead to any break in the time series of indicators of the 15-64 year-old population.

[4] See glossary for the definitions.

The definition of unemployment and the principles for the formulation of the questions necessary to identify employed and unemployed persons are reported in the European Commission Regulation.

The monthly press release on Employment and Unemployment disseminates the estimates on the total aggregates, breakdowns by gender and age class, in addition to the analyses of employed persons by professional status and permanent/temporary job.

In addition, the participation rates in the labour market are analysed. The employment rate measures the share of population that has a job: in an economic point of view, it represents the part of the labour supply that has met the demand, in relation to the population. The unemployment rate is given by the ratio between the unemployed persons and the labour force: it therefore represents the share of the labour force that has not met the demand, in relation to the labour force itself. The inactivity rate measures the share of population that does not participate in the labour market.

The same variables, to a greater degree of territorial detail, together with other variables, are analysed on quarterly and annual basis in the "Labour Market" press release.

Accuracy of the estimates

For the purpose of evaluating the accuracy of the estimates produced by a sample survey, it is necessary to take into account the sampling error that arises from observing the variable of interest only on a part (sample) of the population. This error may be expressed in terms of absolute error (*standard error*) or relative error (the absolute error divided by the estimate, which is called the variation coefficient, VC). In this paragraph, the punctual estimate and its relative error are reported for each of the main variables of interest.

TABLE A. ERRORS OF NON-SEASONALLY ADJUSTED ESTIMATES OF THE MAIN INDICATORS
March 2019

	Punctual estimate	Relative error (VC)
Employed (thousands of units)	23,200	0.003136
Unemployed (thousands of units)	2,705	0.019843
Inactive 15-64 years of age (thousands of units)	13,191	0.005471
Employment rate 15-64 years of age (percentage value)	58.72	0.003088
Unemployment rate (percentage value)	10.44	0.019533
Inactivity rate 15-64 years of age (percentage value)	34.28	0.005471

From these it is possible to build a confidence interval that, with a certain level of confidence, contains the true, but unknown value of the parameter subject to estimation. The confidence interval is calculated by adding and subtracting the absolute sampling error to its punctual estimate, multiplied by a coefficient that depends on the confidence level; considering the traditional confidence level of 95%, the corresponding coefficient is 1.96.

Table A shows the relative errors (VC) of the non-seasonally-adjusted estimates of the main indicators referring to the last month.

The web page of the press release contains an Excel file that shows the table with the relative errors referred to the non-seasonally adjusted monthly estimates of the main indicators, calculated from January 2004.

The main statistical institutes do not publish sampling errors referring to seasonally adjusted estimates. In some cases, the sampling errors of the non-seasonally-adjusted estimates are used, considering that these are quite similar to those related to the corresponding seasonally adjusted estimates. Istat is conducting studies to verify whether this approach is also applicable to the indicators issued in this note.

Through simple calculations, it is possible to derive the confidence intervals with a confidence level of 95% (=0.05). These intervals include, therefore, the unknown population parameters with a probability of 0.95. The following table illustrates the calculations for the construction of the confidence intervals of the estimates of employed persons and the unemployment rate.

TABLE B. ILLUSTRATIVE CALCULATION OF THE CONFIDENCE INTERVAL. March 2019

	Employed (thousands of units)	Unemployment rate (%)
Punctual estimate:	23,200	10.44
Relative error (VC)	0.003136	0.019533
Interval estimate		
Half breadth of the interval:	(23,200 x 0.003136) x 1.96 = **143**	(10.44 x 0.019533) x 1.96 = **0.4**
Confidence interval lower bound:	23,200 - 143 = **23,057**	10.44 - 0.4 = **10.04**
Confidence interval upper bound:	23,200 + 143 = **23,343**	10.44 + 0.4 = **10.84**

Data revision policy

The monthly estimates are released at approximately 30 days from the reference month, in provisional form. Later, when the quarterly estimates are produced (at approximately 60 days from the quarter), the non-seasonally-adjusted estimates of the three months are recalculated and become definitive. The non-seasonally adjusted monthly estimates are then revised just once, at the moment of release of the first month following the reference quarter.

The monthly seasonally adjusted series are estimated every month including the latest available data, and updating the estimate of the models parameters (*partial concurrent approach*). With reference to the seasonally adjusted data, therefore, revisions are observed every month. At the moment of release of the data referring to the month of January of each year, new models for seasonal adjustment are identified.

Information on data confidentiality

The data collected for the labour force survey is protected by statistical confidentiality, and subject to the regulations on the protection of personal data. It may be used, also for subsequent processing, exclusively for statistical purposes by bodies of the National Statistical System, and may also be released for the purpose of scientific research according to the terms and procedures provided by art. 7 of the Ethics Code for the processing of personal data performed in the context of the National Statistical System and by European Community regulation No 831/2002. The estimates, issued in aggregated form, are such that they may not be traced back to the individuals that provided the data, or to which they refer.

Coverage and territorial breakdown

The estimates of the monthly Employment and Unemployment press release are available only for the entire national territory. The quarterly estimates of the “Labour Market” press release are also produced for the geographical areas and for the regions. The annual estimates are also produced for the provinces.

Timeliness

The monthly estimates are produced at approximately 30 days from the reference month, in provisional form, because they are based on a part of the sample referring to the month (nearly 20,000 households, equal to nearly 45,000 individuals, for the month of March 2019) and are issued contextually to the monthly data on unemployment released by Eurostat.

Successively, when the quarterly estimates are produced (at approximately 60 days from the quarter), the three-month estimates are recalculated on the entire sample referring to each month, and therefore are considered final.

Dissemination

The monthly seasonally-adjusted and non-seasonally-adjusted data is available on I.Stat, the data warehouse of Istat, in section "Labour and wages/Labour offer”.

In addition to the monthly estimates, quarterly (and annual) estimates are also produced, starting from the data of the Labour force survey, released with the “Labour market” press release at approximately 70 days from the reference quarter. Quarterly and annual data are also available on I.Stat.

The time series of the continuous survey, starting from 2004 are reported on I.Stat. In addition, the back-recalculated time series of the main indicators since 1977 are reported, recalculated for the purpose of eliminating the breaks caused by the modifications introduced to the survey over time, useful for the purpose of analysing long term trends of the labour market. Data prior to 1977, in particular back to year 1959, when the survey on the labour force began, are in the Time Series database.

Files of quarterly microdata are also released (the file containing elementary data observed in the course of the survey), at approximately 70 days from the reference quarter (https://www.istat.it/en/analysis-and-products/microdata-files).