Sources and methods

Continuous Labour Force Survey (as of 2003)

The Labour Force Survey is one of the centre pieces of the work and unemployment statistical knowledge base. The survey provides much information on the state of the labour market and its development: the size of the working population, the number of unemployed citizens and the unemployment rate, the characteristics of people in the labour market, those joining it and those leaving it, etc. It also provides original data on the structure by profession, on the employment of women or young people, on the duration of employment and on insecure jobs.It thus contributes to the social debate on employment and education policy and serves to support many research works in the economic and social fields.

Furthermore, the Labour Force Survey is the only source of information which enables employment to be measured in accordance with the concepts of the International Labour Organisation (ILO), as outlined and adopted following International Conferences of Labour Statisticians (1954 and 1982). It is part of the framework of labour force surveys carried out in all European Union countries. France can thus compare its unemployment rate and the development thereof with those of other European countries and also with those of other countries who are members of the International Labour Organisation (ILO).

A Continuous Labour Force Survey

The new Labour Force Survey began on 1st July 2001. It takes place quarterly and data is gathered throughout each quarter, whereas the old survey was carried out once a year, usually in March. It therefore fulfils the necessity for better measurement of short-term developments relating to work and unemployment. In addition to the change in its periodicity, the Labour Force Survey has undergone other significant developments. The questionnaire has been modified, both in the interests of European harmonisation, with a view to better comparability with neighbouring countries, and for the sake of enriching knowledge relating to employment, the annual duration of employment, the holding down of multiple jobs and even ongoing training.

The new periodicity of the survey

In theory, the generation of quarterly data can be associated with different methods of gathering: gathering centred on a given period of the quarter or continuous gathering throughout the quarter. It is the latter that has been selected by INSEE (National Institute for Statistics and Economic Studies), notably in order to conform to European regulation n° 1897/2000.

In addition to the fact that it enables short-term employment data to be generated, this new periodicity offers the possibility of analysing infra-annual transitions in the labour market. Since each person can be interviewed up to six times for six consecutive quarters, the survey can provide information on medium-term individual career paths (provided that the fact that the people monitored for six quarters are not representative of the entire population is borne in mind).

The new questionnaire

The new questionnaire provides a measurement of the concepts of employment, unemployment and inactivity which is harmonised across Europe. The European approach is intended to be as factual and as objective as possible. The new questionnaire also provides a greater wealth of information than its predecessor on underemployment and the duration of employment and enables the borders between employment, unemployment and inactivity to be better defined.

Some stages in the history of the Labour Force Survey

1950	First Labour Force Survey
1960, 1968, 1975, 1982, 1990	Overhauls of the Labour Force Survey
1992 - 1995	Experimentation with a quarterly Labour Force Survey
1997	Start of the Labour Force Survey overhaul
1998	Start of the light system, aimed at anticipating organisational problems and developing operational methods for a continuous survey April, October: testing of the new Labour Force Survey (paper) questionnaire
2000	June, October: testing of the Continuous Labour Force Survey computerised (CAPI) questionnaire
2001	February: general repetition of the Continuous Labour Force Survey From June: interviewer training July: start of data-gathering

2002	March: final annual survey

Some stages in the history of the Labour Force Survey (continued)

2007	November: changes to the definition of activity in terms of the ILO, to the field of the survey and to the weighting method applied to all surveys since 2003. December: quarterly publication of employment and unemployment rates in "*Infos Rapides*" (Quick Information).

The concepts of activity, unemployment and underemployment

The total active population includes people with jobs (economically-active population) and unemployed citizens. People who are not part of the total active population are non-workers, that is to say notably retired citizens, students and housewives. The concepts upheld in publications are those of the ILO (International Labour Organisation), as outlined at the 13th International Conference of Labour Statisticians in October 1982 (new version of the text adopted at the 7th conference in 1954). In order to measure the strength of these populations, INSEE interprets the recommendations put forward in the text and converts them into questions in the Labour Force Survey. The ILO's definitions have not changed since 1982, but the survey questionnaire was modified in 2003 in order for the statistics generated to be comparable with those of other European countries. The new questionnaire therefore conforms to European regulation n° 1897/2000 on the European definition of unemployment. It differs from the annual survey questionnaire which began by inviting respondents to spontaneously class themselves as either "employed", "unemployed" or "inactive". In the new questionnaire this question is transferred to the retrospective monthly activity calendar requested at each Labour Force Survey interviewing session. The first time the respondent is interviewed this question focuses on the primary survey situation over the past 12 months, whereas on each subsequent occasion it focuses on their situation over the past 3 months.

In 2007, INSEE's interpretation of the ILO definitions that had been upheld since 1982 was modified so as to bring it in line with Community interpretation, i.e. that of the Statistical Office of the European Communities (Eurostat). This interpretation is now applied to all Labour Force Surveys since 2003. The definitions provided here and used in INSEE publications after this date correspond to this new interpretation.

1. The economically-active population

The French interpretation of the ILO's definition of the economically-active population or "people with a job", provided in paragraph 9 of the ILO declaration (cf. box 1), is as follows:

- people of 15 years of age or over in the calendar year and who have done at least one hour of paid work during the reference week (week running from Monday to Sunday, the dates of which are explicitly stated at the time of interviewing and which fall just before the date of interviewing, between 1 and 16 days in the majority of cases) on the one hand;

- and people of at least 75 years of age and who claim to currently have a job on the other hand,

constituting the majority of the economically-active population.

However, those who have worked at least one hour in the reference week but who do not actually have an occupation are excluded, and, on the contrary, people who have not done any paid work in the reference week but who nevertheless have a job are added to the economically-active population.

- among people of 15 years of age and over who have worked at least one hour in the reference week, those who were on a work placement aimed solely at getting to know how a business or department works (observation placement) are excluded from the economically-active population.
- among people of 15 years of age and over who have not done at least one hour of paid work in the reference week the following people are included in the economically-active population:
    - those who were on a work placement (either unpaid or poorly paid) in a business or in a sector of the public services which involved them doing work of the same nature as that of their colleagues;
    - those who were on paid leave or maternity or paternity leave, part-time, on an employer-paid training scheme or training in the framework of a work-based training contract, partially unemployed (technical unemployment) or on strike;
    - those who were on leave unpaid by the employer (parental leave, unpaid leave, individual training leave, etc.) of an (expected) duration of 91 days or less;
    - those who were on sick leave or leave following an accident at work of a duration of 365 days or less;
    - those who were helping a member of the family (without being paid) or who were working for the family venture, business or practice (family aid);
    - those who were contingent servicemen.

Therefore, according to this definition, a person who has retired but who is doing a few hours' work is classed as part of the economically-active population; similarly, a student doing occasional work (a summer job, for example) will also be classed as part of the economically-active population if they are interviewed during this period.

2. Unemployment

According to the ILO, “unemployed” people (cf. paragraph 10 of box 1) include:

(a) those who are “without work”;

(b) those who are "available to work";

and (c) those who are “looking for work”, or (c) those who have found a job which starts in less than three months' time.

Criterion (a) does not pose any interpretation issues: “without work” means “is not an economically-active citizen” in accordance with the definition given in the previous paragraph. People who have done at least one hour of actual work during the reference week, even if the work was of a purely occasional nature, are therefore excluded from the unemployed population.

“Availability for work” is understood in the sense of “availability to start a job as a salaried or non-salaried employee within two weeks following the reference week”[1].

The “looking for work” criterion is observed over the 4 week period concluding at the end of the reference week. A person is considered to be “looking for work” if, during this period, they have taken at least one specific step towards finding work.

The following are considered as specific steps towards finding work[2] :

- looking for land, premises, material, clients or carrying out a market study;
- looking for financial resources;
- applying for a permit, a licence or permission to set up;
- seeking advice from a public body in relation to finding work;
- being contacted by Pôle Emploi (the French national employment agency), the APEC (executive employment agency) or another public body;
- having contact with an interim agency;
- approaching employers directly;
- attending trade fairs;
- speaking to personal and professional contacts about setting up a business;
- taking a test, having an interview or taking part in a recruitment contest or an administrative contest;
- posting a job advertisement;
- responding to a job advertisement;
- studying the job advertisements;
- looking for a venture, a business or a practice to buy out or to take on under lease management;
- carrying out steps other than those mentioned above.

The harmonised European definition of unemployment recognises each of these methods as specific steps towards finding employment.

The people who simultaneously check the three criteria (a), (b) and (c) are often referred to in French as "*chômeurs PSERE*" (jobless citizens who are looking for work). In addition to this category of people, the unemployed population also comprises people who are without work (a), available for work (b) and (c) who have found a job which will start within three months[3], or for which the period in question is a dead season (in the case of seasonal workers) or precedes the commencement of employment.

3. Underemployment

[1]Before autumn 2007, people who had an illness of less than one month were also considered available according to the French definition. Since that time, when INSEE brought itself into line with the Community definition, this “dispensation” to availability within a fortnight no longer exists.

[2]Since autumn 2007, simply renewing one’s Pôle Emploi (the French national employment agency) registration is no longer considered as a specific step towards finding work.

[3] Before autumn 2007, France did not set a later date limit.

The unemployment or unemployment rate indicator alone is a crude indication of the fluidity of the labour market. Additional indicators provide other diagnostic elements. Underemployment is one of these indicators. A precise definition of this concept was established during the 16th International Conference of Labour Statisticians in October 1998 (cf. box 2).

The underemployed population is made up of two groups of people:

- those who work part-time (less than 35 hours), who wish to work more and who are looking for a job and/or who are available to work more;

- those who have involuntarily worked less than usual, due to partial unemployment or bad weather, for example, whether they work full or part-time.

BOX 1

EXTRACT OF THE DECLARATION ON STATISTICS RELATING TO THE TOTAL ACTIVE POPULATION, EMPLOYMENT, UNEMPLOYMENT AND UNDEREMPLOYMENT adopted by the International Conference of Labour Statisticians (Geneva, October 1982).

The workforce (the current total active population)

8. The “workforce” or “current total active population” includes all people who meet the required conditions for being classed in the group of people in employment or unemployed people, as defined in the following paragraphs 9 and 10.

Employment

9.1. “People in employment” include all those over a given age who were, for a brief specified reference period of a week or a day, for example, in the following categories:

a) “salaried employment”

a1) “working people”: people who, during the reference period, worked in return for a salary or wage in cash or in kind;

a2) “people who have a job but who are not working”: people who, having already worked in their current job, were absent during the reference period and had a categorical connection with their job:

i) the uninterrupted payment of the salary or the wage;

ii) an assurance that the person will return to work at the end of the exceptional situation or an agreement on the date of return;

iii) the duration of the absence from work which, if need be, can be the duration for which workers can receive remuneration with no obligation to accept any other jobs they may be offered.

b) “non-salaried employment”

b1) “working people”: people who, during the reference period, did a job with a view to family benefit or gain, in cash or in kind;

b2) “people who have a business but are not working”: people who, during the reference period, had a business establishment, a shop, a farm or a service provision business but who were temporarily not working for any specific reason.

9.2. In practice, the notion of “work done during the reference period” can be understood as work lasting at least one hour.
9.3. People who are temporarily absent from their work due to illness or accident, leave or holidays, work conflict or strike, educational or training leave, maternity or parental leave, bad economic conditions or temporary suspension of work due to reasons such as unfavourable weather conditions, mechanical or electrical incidents, shortage of raw materials or fuel or any other reason for temporary absence with or without permission should be considered as being in paid employment, provided that they have a categorical connection with their job.

9.4. Employers, people working on their own behalf and members of producer cooperatives should be considered as non-salaried workers and classed as “working” or “not working”, depending on the case in question.

9.5. Unpaid family workers should be considered as non-salaried workers regardless of the number of hours worked during the reference period. Countries which, for specific reasons, would prefer to choose a minimum length of working time as a criterion for including unpaid family workers among people in employment should identify and separately classify people in this category who have worked less than the stipulated time.

9.6. People involved in the production of goods and services for their own consumption or that of the household should be considered as non-salaried workers if such production significantly contributes to the household’s total consumption.

9.7. Apprentices who have received remuneration in cash or in kind should be considered as people in salaried employment and classed as “working” or “not working” on the same basis as the other categories of people in salaried employment.

9.8. Students, homemakers and other people principally involved in non-economic activities during the reference period and who were at the same time in salaried or non-salaried employment as outlined in subparagraph 1 above should be considered as being in employment, on the same basis as the other categories of people in employment, and be separately identified where possible.

9.9. Members of the armed forces should be included among people in salaried employment. The armed forces should include both permanent and temporary members, as specified in the recent revision of the International Standard Classification of Occupations (ISCO).

Unemployment

10.1. “Unemployed people” include all those over a given age who, during the reference period, were:

a) “without work”, i.e. those who were not in salaried or non-salaried employment;

b) “available for work” in a salaried or non-salaried position during the reference period;

c) “looking for work”, i.e. those who had taken specific steps over a recent specified period towards finding a salaried or non-salaried position. These specific steps may include: registration with a public or private employment agency[4]; application to employers; approaching workplaces, farms or factories, in the markets or in other places where workers are traditionally recruited; posting or responding to advertisements in newspapers; making enquiries with acquaintances; searching for land, buildings, machines or equipment to set up a business; steps towards obtaining financial resources, permits and licences, etc.

10.2. In situations where conventional ways of looking for work are not appropriate, where the labour market is largely unorganised or of limited scope, where the uptake of labour supply is, at the time in question, insufficient or where the proportion of non-salaried workforce is significant, the standard definition of unemployment given in subparagraph 1 above can be applied whilst abandoning the “looking for work” criterion.

10.3. In order to apply the criterion relating to availability for work, especially in the situations covered by subparagraph 2 above, appropriate methods should be developed so as to take into account national circumstances. Such methods could be based on notions such as the current desire to work and the fact of having worked previously, willingness to take a position which is salaried based on local conditions or the desire to undertake independent work if the necessary resources and facilities are made available.

10.4. In spite of the criterion relating to looking for work incorporated into the standard definition of unemployment, people without work and who are available for work, who have taken steps towards finding a salaried position or undertaking independent work at a date later than the period of reference should be considered as unemployed.

10.5. People who are temporarily absent from their work with no categorical connection with their work and who were available for work and looking for work should be considered as unemployed in accordance with the standard definition of unemployment. Countries may, however, depending on national situations and policies, prefer to abandon the criterion related to looking for work in the case of people who have been temporarily suspended. In such cases, people who have been temporarily suspended and who were not looking for work but who were nevertheless classed as unemployed should be identified and form a separate subcategory.

10.6. Students, homemakers and other people principally involved in non-economic activities during the reference period and who satisfy the criteria outlined in subparagraphs 1 and 2 above should be considered as unemployed in the same way as the other categories of unemployed people and be separately identified where possible.

[4] European Commission regulation n° 1897/2000 of 7th September 2000 regards contact with an employment agency as an active step, but not administrative renewal alone.

BOX 2

EXTRACT OF THE DECLARATION ON STATISTICS RELATING TO MEASURING UNDEREMPLOYMENT AND INADEQUATE EMPLOYMENT SITUATIONS

adopted by the International Conference of Labour Statisticians

(Geneva, October 1998).

Measuring underemployment related to the duration of employment

7. Underemployment related to the duration of employment exists when an employee's duration of employment is insufficient in relation to another possible position of employment that this person is prepared to occupy and is available to do so.

8.1) People who are underemployed due to the duration of employment include all those who are in employment – as they are defined in the international directives in force relating to labour statistics - who meet the following three criteria during the reference period used to define employment:

a) "willing to work more hours", i.e. those wishing to take on another (or several other) job(s) in addition to their current job(s) in order to work more hours, replace one or another of their current jobs by another (or several other) complementary job(s) of greater duration or work more hours in one or another of their current jobs, or a combination of these elements. In order to show how being "willing to work more hours" is significant in terms of action according to national circumstances a distinction must be made between those who have actively looked for additional work and those who have not. Actively looking for additional working hours must be defined according to the criteria used in the definition of looking for work as used in the definition of the total active population whilst also taking into account the steps required to increase the number of working hours in the position held;

b) "available to work more hours", i.e. prepared to work more hours during a later specified period should the possibility arise. The later period to be specified when the availability of workers to work more hours is being determined should be chosen according to national circumstances and include the period workers also need to leave one job and start another;

c) "having worked below an employment duration threshold", i.e. people whose "actual" working hours over all jobs combined during the reference period, as defined in the international directives in force relating to working time statistics, were below a threshold to be chosen based on national circumstances. This threshold could, for example, be defined in relation to the distinction between full-time employment and part-time employment, median and average values or standards relating to working hours as specified by the relevant legislation, collective labour agreements, flexible working hours agreements or working habits relative to the country.

8. 2) In order to provide the drafting and evaluation of policies with a certain analytical flexibility, as well as for national comparability purposes, countries should endeavour to take a census of all workers who, during the period of reference, were willing and available to work more hours, irrespective of the number of hours that they actually worked during the reference period.

Survey methodology

Field of the survey: respondents and representativeness

The people interviewed in the survey are those loving in ordinary homes[5]. Respondents are interviewed at their main residence, i.e. the residence at which they usually live. Furthermore, people who principally live in a community and occasionally in an ordinary home (such as students living partially in university dormitories, elderly relatives living partially in a retired home, etc.) are also interviewed in the home with which they are connected. The remaining population living in communities is not interviewed in the survey. This includes the staff of hospitals, schools and hotels who live in a community and members of religious communities. Mobile home populations and bargees are not interviewed either.

However, not all those connected to an ordinary home are taken into account in the results. Since the number of people living in communities and interviewed in the labour survey has been deemed insufficient to represent the entire population of communities, the results of the new survey are restricted to those living in ordinary households. The populations of the following communities are thus incorporated into the field of the survey:

- professional servicemen living in barracks or in a camp;

- boarding pupils;

- pupils or students living in independent housing (not in university halls of residence or student dormitories);

All people living in the types of housing which fall within the field of the survey are recorded when the pollster comes to conduct the survey but only those of 15 years of age or over in the calendar year are actually interviewed.

The geographical field of the survey is Metropolitan France. A separate Labour Force Survey is conducted in the French overseas administrative departments and is the subject of separate publications.

Sample of the survey

1. Characteristics of the sample

The Labour Force Survey sample is made up of homes. In order to correctly measure quarterly changes in employment and unemployment, a significant part of the sample is retained from one quarter to another: only $^{1}/_{6}$ of the sample is renewed each quarter. Each home in the sample is interviewed for 6 consecutive quarters.

The survey sample has been drawn from the data available from the 1999 census. It was introduced in sixths from the third quarter of 2001. The sample of the third quarter of 2001 is thus made up of $^{1}/_{6}$ from the new sample and $^{5}/_{6}$ remaining from the light system sample[6]. The second $^{1}/_{6}$ came into play in the

[5] Ordinary homes are self-contained premises used for housing. Mobile homes (caravans, boats, etc.) and communities (establishments and groups) are not classed as ordinary homes.
[6] In order to run in the new survey, a transitional system was put in place. It was a lighter system than the full-scale survey: smaller sample and simplified questionnaire. It was implemented from the third quarter of

fourth quarter of 2001, and so on. Only from the fourth quarter of 2002 was the survey carried out entirely on the new sample.

The quarterly survey sample is made up of around:

- 54,000 homes (of which only those that are main residences and thus fall within the field of the survey will be interviewed):

- 38,000 respondent homes (i.e. including at least one respondent including households of non-working citizens of 65 years of age or over for whom the responses are recovered from the previous interviewing session);

- 72,000 respondents of 15 years of age or over.

Over the period of one year, taking into account the partial renewals, the sample includes around:

- 216,000 homes, of which 81,000 are different;

- 152,000 respondent homes, of which 57,000 are different;

- 288,000 respondents of 15 years of age or over, of which 108,000 are different.

By way of comparison, the annual Labour Force Survey covered around 75,000 homes and 150,000 people of 15 years of age or over.

2. Sample composition[7]

The survey sample was composed using information obtained during the 1999 population census and was graded so that it could be used until mid-2010. The total lifespan of the sample is therefore 36 quarters or 9 years. In other words, all the homes that will be interviewed in the framework of the Continuous Labour Force Survey between 2001 and 2010 were randomly selected as of 2001.

The continuous survey sample is areolar, as was that of the annual survey: it is not drawn directly from a selection of homes, but from a selection of geographical areas made up of an average of 20 homes. In the annual survey, the number of homes per area was 20 in rural areas and 40 in urban areas.

The choice of an areolar sample was motivated by the following three reasons:

- increased geographical concentration of interviews results in savings in terms of both the time required for and the cost of data-gathering, which makes it possible to carry out a large-scale survey;
- achievement of a better response rate than in surveys where homes are not drawn in clusters.
In fact, a positive knock-on effect is generally noted between households in the same area.
A negative knock-on effect is much less common;

- an exhaustive exploration of the area makes it easier to spot "marginal" homes and should prevent the underestimation of certain categories of people (subtenants, live-in domestics, people living in furnished properties or in self-contained rooms, etc.). It also enables "new" homes, i.e. those constructed since the 1999 census, which can thus be easily incorporated into the sample to be spotted.

On the flipside, the areolar sample does have some drawbacks:

1998 to the second quarter of 2001 inclusive. The light system sample was put together from the samples of the annual Labour Force Surveys from 1998 to 2002.

[7] The survey sample composition method is explained in detailed in "*La construction de l'échantillon de la future enquête Emploi en continu à partir du recencement de 1999*" (The composition of the sample for the future Continuous Labour Force Survey from the 1999 census), by Marc Christine, *Les Actes des Journées de Méthodologie Statistique*, 4th and 5th December 2000, INSEE Méthodes n°100, November 2002.

- for an identically-sized sample, the results obtained from an area-based home sample are less accurate than those obtained from a sample of scattered homes. Indeed, households in the same area and therefore the same district often have similar socio-economic characteristics. This is known as the “cluster effect”. This effect is particularly noticeable in nationality and economic activity-based divisions and relatively noticeable in certain socio-professional categories. Smaller areas must be created in order to minimise the cluster effect;

- data-gathering operations are more sensitive: the pollster must no longer only visit pre-determined address but must now carry out an exhaustive census of the homes and their residents whilst strictly adhering to the limits of the area. Incompleteness of the census and failure to adhere to exact limits have detrimental consequences not only on the quality of the survey in question but also on those that are carried out in the area at a later date (risk of bias when gauging the variations that have occurred from one survey to the next when the area is included in two successive samples).

Areas thus defined are not standard geographic units. Splitting the entire district into areas would be too cumbersome and costly a job. Furthermore, in practice, there are several stages involved in selecting a sample: areas are not directly selected, but rather larger, more easily identifiable units known as primary units. Only the units selected are then split into areas, then a selection is made from among these areas.

3. The various stages of selection

a. Primary unit selection

The first stage of selection consisted of creating a sample from primary units.

Nature of the primary units

Existing geographic divisions were used as a basis for the creation of primary units so as to facilitate the demarcation thereof. They also had to meet two criteria:

- not be too large, so that splitting these units was not too cumbersome;

- conversely, not be too small, so that as many areas as required could be found within them.

It should be borne in mind that in order to accurately measure changes from one quarter to another the sample should not change too much between the two quarters in question. In addition to the fact that only $^1/_6$ of the sample changes between two quarters, the areas which have been interviewed 6 times in succession are replaced with geographically close areas. Since the lifespan of the sample was 36 quarters, groups of 6 (= 36/6) close areas were required. Given that an area comprises 20 homes, primary units had to comprise at least 120 homes. This size was not, however, subject to a specific upper limit and in some cases, primary units comprised several thousand homes. An additional stage in the process of splitting the unit was therefore often necessary (cf. 3.b.) in order to form the area groups.

In practical terms, the primary units are actually either communities, IRIS (European inter-network of ethical and solidarity-based initiatives), districts or aggregates made up of these basic units.

Number of primary units

The Labour Force Survey must provide quarterly results which are representative of Metropolitan France. Therefore, in order for the sample to be well distributed throughout the district, each quarter one and only one area in each primary unit sampled is mobilised. For a predicted sample of 51,000 homes per quarter[8], the approximate number of primary units to be selected was 2,550 units (= 51,000/20). In reality, as a precaution, a number of additional units were selected to form a reserve. This reserve is aimed at providing subjects for tests, for example, or for protection against subsequent data-gathering problems (in the event of a decreased response rate, areas being difficult to survey due to mass refusal, replacements due to various causes, etc.).

Primary unit surveying plan

In order to be representative of the country, the primary unit sample was stratified according to two criteria: the region (21 regions, Corsica being grouped with the PACA region) and the size of the incorporated urban unit (five urban unit brackets: rural communities, urban units of less than 10,000 residents, urban units of 10,000 to 50,000 residents, urban units of 50,000 to 200,000 residents and urban units of 200,000 residents or more).

The “useable” sample finally consisted of 2,554 units. In reality, a larger sample was predicted (3,002 unites), then the 2,554 were selected randomly from each stratum of the entire sample. The unselected units form the reserve. The number of units (including the reserve) selected in each stratum was determined by calculating the optimal sample allocation, aimed at maximising accuracy of the quarterly national estimate of the number of unemployed people. The allocation was made under budgetary constraints, on the one hand, and under accuracy constraints, imposed by the European harmonisation, which combines regional accuracy requirements and quarterly variation accuracy on the other hand.

The selection of units in each stratum was made with a probability proportional to their size in terms of total number of homes. Systematic selection was used on unit data sorted by employment area, community and IRIS (if need be), which ensures indirect stratification using these criteria.

The table below indicates the number of primary units selected in each stratum, including the reserve. The number in brackets provides the same information but excludes the reserve.

Table: Number of primary units selected in each stratum

	Rural community	Urban unit of less than 10,000 residents	Urban unit of 10,000 to 50,000 residents	Urban unit of 50,000 to 200,000 residents	Urban unit of 200,000 residents or more	Total
Ile de France	16 (15)	8 (8)	19 (17)	5 (5)	429 (387)	477 (432)
Champagne Ardenne	29 (22)	11 (9)	32 (24)	30 (23)	17 (13)	119 (91)
Picardie	31 (24)	19 (15)	20 (16)	34 (26)	-	104 (81)
Haute Normandie	29 (22)	7 (5)	18 (14)	8 (6)	47 (36)	109 (83)
Centre	30 (24)	18 (14)	15 (12)	24 (19)	29 (23)	116 (92)

[8] The actual size of the sample is actually a little higher (around 54,000 homes), since the areas sometimes, for practical reasons, included more than 20 homes.

Basse-Normandie	36 (29)	13 (11)	15 (12)	27 (22)	-	91 (74)
Bourgogne	43 (33)	18 (14)	28 (22)	8 (6)	21 (16)	118 (91)
Nord-Pas-de-Calais	18 (16)	13 (12)	16 (15)	53 (48)	104 (94)	204 (185)
Lorraine	21 (17)	16 (13)	16 (13)	32 (26)	16 (13)	101 (82)
Alsace	13 (11)	12 (10)	11 (9)	3 (2)	41 (33)	80 (65)
Franche-Comté	26 (21)	8 (7)	13 (10)	31 (25)	-	78 (63)
Pays de la Loire	32 (29)	14 (13)	18 (16)	40 (36)	31 (28)	135 (122)
Brittany	40 (33)	18 (14)	21 (17)	14 (11)	20 (16)	113 (91)
Poitou-Charentes	47 (36)	12 (9)	18 (14)	32 (25)	-	109 (84)
Aquitaine	33 (29)	12 (10)	17 (15)	21 (19)	39 (35)	122 (108)
Midi-Pyrénées	35 (30)	14 (11)	18 (15)	8 (7)	35 (30)	110 (93)
Limousin	40 (32)	9 (7)	6 (5)	34 (27)	-	89 (71)
Rhône-Alpes	49 (44)	21 (19)	30 (27)	42 (38)	94 (85)	236 (213)
Auvergne	34 (27)	11 (9)	11 (9)	11 (9)	18 (15)	85 (69)
Languedoc-Roussillon	33 (29)	31 (27)	20 (17)	37 (32)	20 (18)	141 (123)
PACA	25 (23)	17 (17)	33 (29)	25 (23)	146 (132)	246 (224)
Corsica	8 (7)	2 (2)	1 (1)	8 (7)	-	19 (17)
Total	668 (553)	304 (256)	396 (329)	527 (442)	1107 (974)	3002 (2554)

N.B.: the figures in brackets indicate the number of primary units excluding the reserve.

Interpretation: in the Limousin “Urban unit of 50,000 to 200,000 residents” stratum 34 primary units were selected (and 27 excluding the reserve)

b. Splitting primary units into sectors and selecting sectors

Splitting certain considerably sized primary units into areas would have been a very hefty task. This is why primary units of more than 240 homes were split into sectors beforehand. A sector is demarcated by easily visually spotted elements such as streets, roads, railways, watercourses, etc. The number of homes from each sector was to include between 120 and 240 homes. The lower limit of 120 homes is due to the fact that, as explained above, in order to ensure the rotation of the sample for nine years it was necessary to create 6 close areas of around 20 homes each within the sector; the upper limit of 240 naturally imposes itself: sectors of above 240 homes could be subdivided into at least two sectors of 120 homes.

Once the unit had been split into sectors, certain sectors were selected: one sector was selected in each primary unit, with a probability proportional to its size in terms of the number of homes.

c. Splitting sectors into areas and selecting areas

Splitting the sectors was aimed at creating areas of 20 homes (counted in the 1999 census), but for practical reasons a range of between 17 and 23 homes inclusive was allowed.

If the sector consisted of exactly 6 areas, they were all included in the sample; otherwise, 6 of them were drawn randomly with equal probability. In total each sector resulted in the creation of 6 adjoining areas.

All the homes within a particular area are included in the sample. However, only those that can be classed as ordinary homes which are the main residence of the household will be interviewed.

Homes constructed since the 1999 census (known as “new” homes) which belong to the selected areas are also included in the sample to a certain extent, depending on the number of homes:

- if the area contains 10 new homes or less in total, all these homes must be interviewed;

- if the area contains 11 to 40 new homes in total, only 1 new homes must be interviewed;

- if the area contains more than 40 new homes in total, a quarter of these new homes must be interviewed.

The selection of new homes, where necessary, is of equal probability among all new homes spotted in the area by the pollster.

The method used for sampling new homes in the new survey is different from that of the annual survey. In the latter, if the area included 10 new homes or less they were all interviewed, if the area included more than 10 a random selection was made from a new homes database created by INSEE.

d. Summary of the surveying plan and determining the survey rate

The surveying plan can be summarised in the following four stages:

- stratified selection of 3,002 primary units, with a probability proportional to the size of the primary unit in terms of number of homes and with optimal allocation of primary units in the strata. Selection is made by the simple random sampling of 2,554 of the 3,002;

- selection of a sector in each primary unit with a probability proportional to the size of the sector in terms of number of homes;

- selection of 6 areas in each sector with equal probability;

- exhaustive selection of the homes in the area.

The survey rate which results from this sampling method is the product of the probabilities associated with each stage. Since the final stage involves exhaustive selection, all homes in the same area have the same survey rate (excluding new homes). On average, this survey rate is 1/560, which means that one home in the sample represents on average 560 homes which fall within the field of the survey.

4. The sample rotation system

The sample is renewed by one sixth every quarter. The sample rotation system has been planned out for the duration of its lifespan.

In each sector, the 6 sampled areas were numbered randomly from 1 to 6: the number allocated constitutes the serial number. It determines the order in which the area is introduced into the sample, each area being part thereof for 6 quarters. The areas in series n°1 will be interviewed first, etc. Areas which are not selected for the main sample were also numbered (7, 8, etc.) and could possibly serve as a reserve.

However, not all the areas in the same series are introduced simultaneously into the sample: in the third quarter of 2001 only $^1/_6$ of the sample was introduced to replace one part of the light system survey. Another sixth was introduced in the following quarter, and so on until the 4th quarter of 2002. The group of sectors was therefore separated into 6 parts, each represented by a subsample number which specifies the time at which the sector is introduced into the new survey sample.

Finally, a number between 1 and 13 was also randomly attributed to each sector, irrespective of the subsample number. This enables each sector to be associated with a particular week of interviewing in a given quarter. The interviewing sessions of a given quarter must indeed be uniformly distributed over the 13 weeks in the quarter. Successive interviewing sessions in a particular area thus take place exactly 13 weeks apart from each other[9].

Carrying out the survey:

1. Organising data --gathering

The survey method was designed so as to reduce as much as possible the observation errors likely to be committed in the field.

The pollster has a detailed map of the survey area and an area file in paper form. These documents enable the pollster to spot any changes that may have taken place in the housing stock (housing mergers/break-ups, change of occupancy, construction, demolition, etc.) to be interviewed.

The pollster's first job involves listing all premises located in the area, whether used for housing or not, and drawing up a list of buildings or houses completed since the previous survey (or since the 1999 census when this is the first survey in the area).

The pollster has on their micro laptop a "premises sheet" for each home visited during the previous survey or for each home listed in the census when this is the first survey in the area. They create a premises sheet for all new premises in the area. On this "premises sheet" the pollster states whether or not the premises is used for housing and, if so, the type of housing and the result of the interview. In the event of the survey being accepted the pollster also provides the list of occupants and their position within the household and gives each occupant a number. This "premises sheet" enables the same home number to attributed to the home from one quarter to the next, and the same individual number to each person from one quarter to the next. This strict and identical numbering of people and homes has two advantages: on the one hand it enables responses given by the respondent during the previous interview to be taken into account when the same person is interviewed for the second, third or even sixth time and the questionnaire to be adapted to their previous responses. On the other hand, once the data-gathering is

[9] Since a year does not have exactly 52 weeks, certain quarters may consist of 14 weeks.

complete and for operational purposes, this tracking enables a person's responses to be compared over time and changes in their situation to be measured.

Subsequently, the pollster proceeds with the actual interviews. In the event of the survey not needing to be carried out (vacant home, secondary residence, etc.) or where it is not possible for the survey to be carried out (refusal or absence for the duration of the survey), the pollster notes this on the "premises sheet". Otherwise, all members of the household of 15 years of age or over are interviewed.

The pollster is not obliged to interview each of the members of the household personally - any of the people present at the home when the pollster visits may respond on behalf of the others. Thus, out of 100 completed questionnaires, around 40 were not completed by the person in question, but rather by another member of the household, either because the person in question was absent at the time of the pollster's visit or telephone call or because they could not or did not wish to respond. Though this procedure makes the survey quicker and less costly, it can, however, limit in some ways the accuracy of the information gathered and pollsters must therefore endeavour to obtain direct responses wherever possible.

2. Interviewing method and the distribution of interviews over time

Homes are interviewed for six consecutive quarters. Interviewing takes place face-to-face with the respondent in their home for the first and sixth survey sessions. The second, third, fourth and fifth sessions (or "intermediate interviewing sessions) take place over the phone for primarily budgetary reasons. Telephone surveys are less costly as they do not require physical relocation of the pollster. If the pollster was not able to carry out the interview by telephone they must visit the home to carry out the interview. Visiting the home to carry out the survey is also recommended in the case of homes with a large number of residents, for which telephone interviewing would not be appropriate, as well as for homes which do not have telephones or where residents do not wish to give their number. The interview also takes places in person when there has been a change of family living in the home.

A letter is sent informing households that they are going to be interviewed shortly in the framework of the Labour Force Survey. According to the tests carried out in 2000, interviewing a person takes an average of 19 minutes in the case of the first interviewing session and 7 minutes for subsequent interviewing sessions since certain questions are only asked the first time.

The survey takes place throughout the 52 weeks of the year. Each interviewing session is linked to a reference week (from Monday to Sunday), on which the main questions, notably those aimed at classifying people as active, unemployed or inactive, focus. Data-gathering for a given reference week begins on the Monday following the reference week and ends two weeks and two days later. Pollsters therefore have two weeks and two days to interview all homes associated with this reference week. They are instructed to carry out as many interviews as possible at the start of the data-gathering period partly because respondents can provide more accurate responses if they are interviewed on recent events and partly because this way the pollster has more chance of successfully contacting the maximum number of people.

For any given home, the six successive interviewing sessions are associated with reference weeks which fall exactly one quarter (13 weeks) apart from each other. The quarterly operations consist of combining the responses obtained over the 13 weeks in the quarter. The annual results published are an average of the quarterly results.

Quality of results obtained from the survey

The quality of the results of the survey initially depends on the correct gathering of the data and also on the processing of the data gathered.

1. Quality of data-gathering

The success of the survey at the data-gathering stage presupposes correct sampling, a survey questionnaire adapted to the subject and respondents in question and a network of qualified pollsters. By and large these conditions are fulfilled in the Labour Force Survey. The sampling method, which is identical to that of the annual survey, has long been tested and is very appropriate to a large-scale survey. The questionnaire was completely reformed for the introduction of the new survey and efforts were made to improve the formulation of the questions and the adequacy of the questionnaire in terms of new needs for information on the labour market. Pollsters are trained every year and many of them have much experience of the Labour Force Survey. Furthermore, regional offices of INSEE ensure that any anomalies detected are eradicated, possibly by viewing the questionnaire on the computer and returning it to the pollster if necessary.

Despite all this the results of the survey remain imperfect: they involve a certain amount of uncertainty, due to the fact that they are obtained from a sample. Furthermore, some households refuse to respond or are impossible to get hold of, the listing of homes or their occupants can include errors or omissions and some questions (such as those related to salary, profession, employer's address, qualifications, etc.) may be subject to error, inaccuracy or even refusal on the part of respondents to answer the question.

The proportion of surveys accepted is a few points lower with the new survey than with the annual survey. There are several reasons for the slight decline of this indicator. Firstly, the period during which the data can be gathered is shorter in the continuous survey than in the annual survey (two weeks and two days as opposed to four to five weeks), which mechanically increases the chances of pollsters experiencing some difficulty in contacting households. Furthermore, since data-gathering is spread throughout the year, it covers periods when an increased number of households are absent (school holidays, for example), whereas the annual survey took place in March, a month characterised by a high household presence rate. Finally, the number and frequency of interviewing sessions in the continuous survey (six consecutive quarters as opposed to three consecutive years in the annual survey) increases the risk of households becoming weary of the survey.

Analysing the results of the survey subsample by subsample (incoming sixth, subsample at the second interviewing session stage, etc,) does not give the same results for each of them. This result has long been known. As early as 1975, Barbara Bailar ("The effects of rotation group bias on estimates from panel surveys", Journal of American Statistical Association) identified these differences in the Current Population Survey (CPS), the American equivalent of the Labour Force Survey. In the annual Labour Force Survey, these differences had been noted and studied from as early as the beginning of the eighties. The quarterly Labour Force Survey imposes the same sort of limits. The results can vary depending on the sessions, whether due to sampling fluctuations (chance does not necessarily give the same results over several samples, the risks of divergence being as great as their size is small) or due to the fact that households' response behaviour (acceptance of survey, manner of responding, etc.) is likely to depend on whether or not they have already been interviewed previously. These biases are adjusted and remedied to correct them (cf. below), although some are allowed to slip through. This phenomenon is referred to in the academic literature as "rotation bias".

2. Adjustments

As is the case for all surveys carried out on households, adjusting the results of the survey has two main objectives: to compensate for the bias arising from non-response and to reduce sampling fluctuations as much as possible[10].

Adjustments are made using the “margin adjustment" method. This method consists of modifying the weights of the respondents so that the total of certain variables (in this case those mentioned above) estimated from the sample respondents is equal to the actual total which is also known.

a. Correcting non-responses

The survey rate[11] in the continuous survey is around 1/560th, which means that for a given quarter, one home in the sample would represent 560 homes in the total population if all homes could actually be surveyed. Indeed, it is not possible to obtain a response from all homes. Correcting non-responses involves modifying the initial weight of the homes so as to take into account the fact that not all of them respond. In practice, non-respondents are not randomly spread throughout the sample: the non-response rate of people living alone is higher than that of homes with several residents; it is also higher in cities than in the countryside and in apartment blocks than in detached houses. The adjustment will be all the better if it alters the initial weights so that households who fail to respond are represented by households with characteristics as close to theirs as possible. These characteristics must therefore be known for both respondents and non-respondents. As far as the Labour Force Survey is concerned, the variables finally selected were those used to characterise homes at the time of the 1999 census:

- the size of the urban unit in which the home is located in 5 groups;
- the type of dwelling (detached house, farmhouse or apartment block);
- the nature of the dwelling (main residence, secondary residence or vacant home)
- the number of rooms the dwelling comprises;
- the socio-economic profile of the district in terms of Tabard’s typology[12].

For homes constructed after the 1999 census, no adjustment variables used to characterise the home at the time of the 1999 census are available by definition. New homes are therefore considered separately. The number of new homes encountered in the Labour Force Survey is adjusted against the total number of new constructions (whilst distinguishing between urban unit brackets), calculated by INSEE using sources from the department responsible for facilities.

Surveying non-respondents

Since the 1st quarter of 2007 a postal survey of non-respondent homes is carried out every quarter. The questionnaire sent out is a simplified version of the Labour Force Survey and focuses mainly on questions relating to working status. An overrepresentation of economically-active people is noted among those who

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[10] A detailed description of the reasoning behind the development of this method is outlined in “*Repondération dans la nouvelle enquête Emploi en continu*” (Reweighting in the new Continuous Labour Force Survey), by Philippe Février and Pauline Givord, *Journées de méthodologie statistique*, 2002 (accessible at http://jms.insee.fr/), in “*Travaux sur la repondération de l’enquête Emploi en continu*” (Works on the reweighting of the Continuous Labour Force Survey) by Philippe Février, internal note n° 056/F410, and also in the internal note “*Repondération de l’enquête emploi en continu*” (Reweighting of the Continuous Labour Force Survey) by Dominique Place, N° 3141/DG75-F410.

[11] The opposite of the survey rate is called the "initial weight" or initial weighting. It can therefore be said that the initial weight of the dwellings in the sample is around 560.

[12] Cf. Working document: socio-economic representation of the district.

respond to this survey[13]. The abovementioned adjustment variables only partially allow the bias due to non-response to be corrected. It was therefore decided that information on working status provided by the non-respondent survey should be taken into account in the adjustment procedure.

b. Adjusting sampling fluctuations

When a sample is randomly selected for a survey it is often the case that the sample obtained is not exactly representative of the reference population in terms of certain criteria which are important for the subject of the survey. For example, we know that in 1999 the French metropolitan population consisted of 50.8% women. When the proportion of women who responded to the survey is calculated, the result is 50.6%. This difference between the actual value and the value provided by the survey is known as a sampling fluctuation.

These sampling fluctuations can be adjusted by modifying the weighting of the individuals in the sample. Correcting sampling fluctuations presupposes having information from a source other than the survey and of better quality, or better still the "actual" value. The possibilities of correcting the fluctuations are therefore limited. The criteria on which reweighting in the Labour Force Survey is based are age on 31st December of the year in question (in five-year age groups), gender and region. The adjustment therefore adjusts the weighting of each respondent so that that number of people of the same gender and the same five-year age group estimated by the survey at regional level is equal to the number of people of the same gender and the same five-year age group known elsewhere for each of the 21 regions of Metropolitan

France (demographic information obtained from the updating of the population census data with civil status data). In the new survey it is the population of ordinary homes broken down into gender and five-year age group at regional level which is used as adjustment information, whereas in the annual survey the adjustment was made based on the population of Metropolitan France by gender and five-year age group.

c. Combination of the two types of adjustment

The two types of reweighting, for correcting non-responses and sampling fluctuations, can either be carried out successively (alteration of weightings to correct non-responses then modification of the weightings obtained to correct random errors) or simultaneously. When two stages are involved, as was the case in the annual survey, the second adjustment distorts the set of weightings obtained at the first stage and at least partially "destroys" the first adjustment.

For the new survey, a single-stage adjustment is made, but which results in a certain opaqueness since it is not possible to separate weighting modifications due to non-response from those due to sampling fluctuations. Furthermore, as in the annual survey, in order to ensure coherence between home-level estimations and individual-level estimations, the statistical unit to which the adjustment was made is the home. All people of 15 years of age or more in the same home therefore have the same weighting.

Numerically-speaking, whereas the initial home weightings were on average 560, the weightings after adjustment (adjustment for non-response and adjustment for sampling fluctuations) are on average 700.

The reweighting is carried out separately for each of the six subsamples. Indeed, response behaviour seems to depend on the stage of interviewing (response rates are higher for intermediary interviewing sessions in a given area than they are for the first and final interviewing sessions). It is therefore preferable to process subsamples separately. The final estimations of the variables across the entire

[13] The 2007 response rate to this postal survey was 22%.

sample for the quarter in question are obtained through the average of the estimations obtained on each of the six subsamples.

d. Updating weightings

Since the Labour Force Survey is carried out quarterly, adjustments are made each quarter to the distribution of the regional population by gender and five-year age group in the middle of the quarter. This information comes from the demographic assessment produced each year based on the population census. Every time there is a new end-of-year population census estimation the demographic assessment is retrospectively reviewed until 2000 and thus provides new population pyramids for all years from 2000 until the present day for the entire population as well as for the population of people living in ordinary homes. Labour Force Survey adjustments since 2002 are currently repeated following each annual population review, which may explain marginal differences between figures published with different weightings.

3. Evaluating random survey errors

The Labour Force Survey data are, as is the case with all sample surveys, affected by errors which may be measured using the standard deviation of each of the estimations. Estimating these random errors is based on two things:

- on the one hand, the method used to gather the data, i.e. the type of sampling (stratified areolar selection) previously described;

- and on the other hand the fact that the survey is readjusted based on information which is exogenous yet which is considered as being certain (adjustments).

The sample used to carry out this survey is one of the many samples which may have been formed with the surveying plan used. Each of these samples would have produced more or less different figures. The sampling technique used is unbiased, which means that for a given figure, the average of the estimations for each of the samples which may have been formed by this technique is equal to the results we would have seen were the survey to be carried out on the entire population.

It therefore remains to determine to what extent the estimation of this figure by our particular sample is likely to deviate from the average. This is what the standard deviation of the estimation, from which the confidence interval is established, measures, although this standard deviation itself is in fact estimated. If the survey were to be carried out on the multitude of samples that could be formed through the technique used and if, for each of them, the workforce of a given population along with the standard deviation of this estimation were calculated, then practically 95% of intervals of two standard deviations on either side would accommodate the average of all possible estimations (which is equal, of course, in an unbiased sample such as that of the Labour Force Survey, to the actual value).

For a particular sample, this interval therefore has a probability of 0.95 (95 chances in 100) of accommodating the same size workforce that would be counted were the survey to be carried out on the entire population. Similarly, an interval of more or less one standard deviation has 2 chances in 3 of accommodating this workforce. The proportion reaches 99% for an interval of 3 standard deviations on either side of the estimation. Some of these intervals are provided in certain publications drawn from the Labour Force Survey.