



METHODOLOGICAL NOTE REGARDING THE REGULATIONS MADE IN THE HOUSEHOLD LABOUR FORCE SURVEY

**Labour Force and Living Conditions Department
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1. INTRODUCTION

Turkish Statistical Institute (TurkStat) compiles detailed and up to-date information on labour force status of the population, employment and unemployment regularly via Household Labour Force Survey (LFS) as the main data source that provides information on the supply side of the labour force. With the reference month of January 2021, a number of regulations have been made within the scope of the survey in order to maintain international comparability and improving the timeliness of the published results.

Following international standards in producing statistics in accordance with its working principles, TurkStat, since 1988, has been using the definitions of employment and unemployment determined by the International Labour Organization (ILO)¹. In addition, LFS has been implemented in line with the Statistical Office of the European Union (Eurostat) standards since 2004.

Due to the need for up-to-date indicators and new definitions to better measure the changes in the structure of the labour market in the course of time, ILO has conducted some studies to update the definitions. In this context, the new definitions and standards regarding the measurement of employment and unemployment were determined with the 19th International Conference of Labour Statisticians (ICLS)² held in 2013.

The Eurostat has carried out some standardization studies in order to put into practice the new definitions and ensure the harmonization of the LFS implementation in EU countries. As a result of these studies, Integrated European Social Statistics Regulation³ No. 2019/1700 was established to ensure the harmonization of LFS implementation in EU countries. As a result of these studies, the European Union (EU) Integrated European Social Statistics Regulation (IESS) was entered into force as of January 1, 2021. In line with the relevant EU regulation, the survey design was reviewed, the questionnaire with new definitions and concepts was designed and improvement was made to be able to publish more timely estimates to users.

TURKSTAT has followed closely the relevant international meetings and improvements, has participated in working groups on the subject in order to ensure compliance with these regulations, and has concentrated the studies on the subject for the last few years. In this context, studies have been carried out and analysis studies have been completed in order to measure the effects of the relevant changes on the estimations. As a result of the studies, comparable time series for the main labour force indicators were estimated retrospectively by using statistical and econometric methods.

2. NEW REGULATIONS

Within the framework of the mentioned international regulations, "Labour Force Statistics" were revised basically for the following reasons.

¹[ILO 13th International Conference of Labour Statisticians \(1982\)](#)

²[ILO 19th International Conference of Labour Statisticians \(2013\)](#)

³[The Integrated European Social Statistics Regulation \(October 14, 2019\)](#)

- i. Adapting to the new definitions updated by international regulations and producing additional indicators,
- ii. Publishing independent monthly estimates instead of producing monthly labour statistics based on the 3 months moving average results in order to produce more timely and independent monthly indicators,
- iii. Rearrangement of press release and statistical table contents within the content of the stated changes.

Detailed explanations regarding these changes are provided below.

2.1. Providing the International Standards for Definition and Concepts

In recent years, after a series of developments such as the differentiation in the working status in the labour markets, developing policy needs and the increase in the demand for statistics to produce policies, there has been a need to review the definitions and standards of labour statistics. Definitions and standards regarding types of work, employment, unemployment and labour underutilization are determined with the 19th ICLS. The related changes are summarized below.

The definition of "work" and "type of work"

Five different types of work have been defined in order to introduce the indicators for the labour force supply realized for different purposes. Type of work has been determined taking into account the intended target and type of production. These are:

1. **Own use production work:** Comprising production of goods and services for own final use.
2. **Employment work:** Comprising work performed for others in exchange for pay or profit.
3. **Unpaid trainee work:** Comprising work performed for others without pay to acquire workplace experience or skills.
4. **Volunteer work:** Comprising non-compulsory work performed for other without pay.
5. **Other work activities:** Comprising free community service determined by a court order or other similar authority, free work by prisoners, unpaid military service.

Employment concept and criteria

Employment definition which was new determined has a narrower scope than the current employment definition. While farmers who produce goods for their own final use are considered as employed if the amount of their production meets a significant part (more than 50%) of their annual food expenditures in the current definitions, according to the new regulations these persons were excluded from the employment scope and evaluated in a separate type of work.

Employed persons; are defined as working-age people who engage in any activity to produce goods or provide services for wage or profit during the reference period and are divided into two groups:

- **At work:** Persons who worked *at least one hour* during the reference week,
- **Not at work:** Persons temporarily absence from work during the reference week

With the 19th ICLS Resolutions, the criteria of the employment for which has job but not at work has changed. In determining the employment status of persons who are not at work the reference week, instead of "status in employment", "reason of absence from work" has started to be taken into account as criteria. The persons are considered as employed during the time absence from the work, if there is 'job attachment' and were expected to return to work after the period of absence. Those who are employed that determined as have a 'job attachment' with their job by using the combination of the criteria of income and/or the absence duration according to reason of the absence from work. This situation is based on the assumption that reasons of absence from work will have the same validity in terms of employment, regardless of wages, rights or interests for employees or own account workers.

OLD CRITERIA FOR EMPLOYMENT		
	Status in Employment	Labour Force Status
At work	-	Employed
Temporarily not at work	Employer Own account workers	Employed
	Regular employee	If continue to receipt 50% or more of the pay/income or the duration of absence is less than 3 months Employed
	Casual employee	If continue to receipt 50% or more of the pay/income Employed
	Unpaid family worker	Not employed

NEW CRITERIA FOR EMPLOYMENT		
	Reason of absence from work (The same criteria is valid for regular or casual employee, own account worker, employer or unpaid family worker)	Labour force status
At work	-	Employed
Temporarily not at work	<u>Absent from work for a short time:</u> Public holiday or annual leave Sick leave Working time arrangement Maternity/paternity leave Job related training	Employed
	Off season	If continue to perform task or duty during the off season period Employed
	Parental leave	If continue to receipt pay/income and/or the duration of absence is 3 months or less Employed
	Other reasons	If the duration of absence is 3 months or less Employed

Job search methods reorganized for unemployment

There is no significant difference between the new definitions, criteria and the old definitions regarding the unemployment. However, some changes have been made in job search methods. In order to be defined as unemployed, the three conditions listed below must meet together.

Not in employment in the reference period and

- Seeking a job by using an active job search channels during the last 4 weeks,
- Being available to start work within 2 weeks if find a job
- Not look for a job because have found a job and will start work within three months

Until 2021, people who used both active and passive job search methods during the last 4 weeks are considered as "looking for a job".

However, with the implementation of the 19th ICLS Resolutions, as of 2021, only active job search methods are considered as job search criteria. Passive job search channels are the status of waiting for answers to old applications made with active job search channels.

ACTIVE JOB SEARCH METHODS
<ul style="list-style-type: none">- Contact employers directly- Ask friends, relatives or acquaintances- Contact a public employment services (İŞKUR)- Contact a private employment services- Studying job advertisements- Place or answer job advertisements- Place or update CVs online- Taking the oral or written job exam/interview- Making preparations to set up a business

Supplementary indicators for labour force

The new indicators are defined with the 19th ICLS in addition to the existing labour force indicators to show the differences between countries better. Because the labour market structure changes over time and the unemployment rate is not sufficient to measure labour force solitary. In this context, supplementary labour force indicators whose definitions and standards were determined by 19th ICLS and started to be published are as follows;

1. Combined rate of time- related underemployment⁴and unemployment

$$[(Persons\ in\ time-related\ underemployment + persons\ in\ unemployment)/Labour\ force]*100$$

2. Combined rate of unemployment and potential labour force⁵

$$[(Persons\ in\ unemployment+ Potential\ Labour\ Force)/(Labour\ Force +Potential\ Labour\ Force)]*100$$

3. Composite measure of labour underutilization

$$[(Persons\ in\ time-related\ underemployment +Persons\ in\ unemployment + Potential\ Labour\ Force)/(Labour\ Force +Potential\ Labour\ Force)]*100$$

⁴**Time - related underemployment:** Persons employed in the reference week who worked less than 40 hours as total (in main job and additional job/s) and willing to work additional hours and were available to do so.

⁵**Potential labour force:** Among the persons included in the working age population who were neither employed nor unemployed during the reference period; they are people who are looking for a job but are not able to start work in a short time, who want to work even though they are not looking for a job and who are able to start work in a short time.

2.2. Production of Monthly Independent Labour Force Indicators

LFS is carried out by sampling method. The two-stage stratified cluster sampling method is used in the sampling stage of the LFS. At the stage of creating the sampling design and determining the sample size, Eurostat's 577/98 regulation is taken as a basis. Before 2020, the research was designed to reach monthly, quarterly and annual forecasts basis on quarterly moving averages, with field application every month. Although this design allows to produce detailed statistics on a monthly basis, it is insufficient in terms of timeliness of the indicators published and reflecting the labour market outlook for the relevant month.

As of 2020, the sample design has been updated to meet the requirements of Eurostat's implementation regulation numbered 2019/2240 and to produce independent main labour force indicators for the relevant month. Accordingly, the quarterly sample size was increased from 44.000 to 58.560 households without deteriorating the basic structure of the sample design. As from 2021 the use of household size information, which is used for external control in the weighting process, was updated, taking into account the item of the relevant regulation using household size information in the weighting stage (Chapter 9, item 5). In addition, NUTS Level 3 information has been added as external control to contribute to the target of producing main labour force indicators on provincial basis in the near future. As a result of analysis, it was observed that it didn't make a significant change on main labour force indicators, but it had an increase effect in some quarters in agricultural employment. As of 2021, seasonal effect adjusted monthly estimates which is the regarding month of main labour force indicators and monthly press releases have started to be published.

2.3. Dissemination of Labour Force Statistics Results

With the publication of monthly independent LFS results, significant improvements have been achieved in terms of timeliness. As of 2021, press releases with monthly main labour force indicators will be announced to users within 40 days from the reference month. In addition, quarterly press releases including detailed labour force indicators and annual press releases including regional results will continue to be published.

Most of the series included in the LFS contain seasonal effects. Seasonal effects prevent observing the general trend of the data, as they are temporary in nature. In data that includes seasonal movements, it is very difficult to understand whether the change in a certain period is caused by real increase or decrease in the data or seasonal effects. Therefore, in order to explicate quarterly and monthly changes for short-term indicators in a healthy way, it would be more meaningful to make comparisons based on seasonally adjusted values in comparison to the previous period / month. In this context, in headlines of the press release, seasonally adjusted indicators started to be announced as national estimates.

3. IMPACT OF THE NEW REGULATIONS ON LABOUR FORCE INDICATORS

With the year of 2021, the new regulations were made in the definition, scope and design of LFS and this situation caused the obtained indicators to differ from the previous series. In order to both estimate the impact of the new regulations on the indicators and use it in retrospective recalculation of the series, questions were added to the existing questionnaire for measuring the definition effect in 2020, and the sample size was increased so as to produce monthly independent estimates by preserving the current design. Finally, the new questionnaire was tested with the pilot survey before the 2021 field implementation.

Findings obtained as a result of analysis studies conducted to measure the definition effect throughout 2020

In the transition process to the 19th ICLS decisions for the LFS, three effects can be mentioned that are reflected in the indicators:

- **The farmers who produce for their own consumption are excluded from employment:**

The share of these people in total employment is very small, and the number of people who will be out of employment due to this difference in new definitions is calculated as approximately 50 thousand people for 2020.

- **Starting to use only active job search channels among job search channels:**

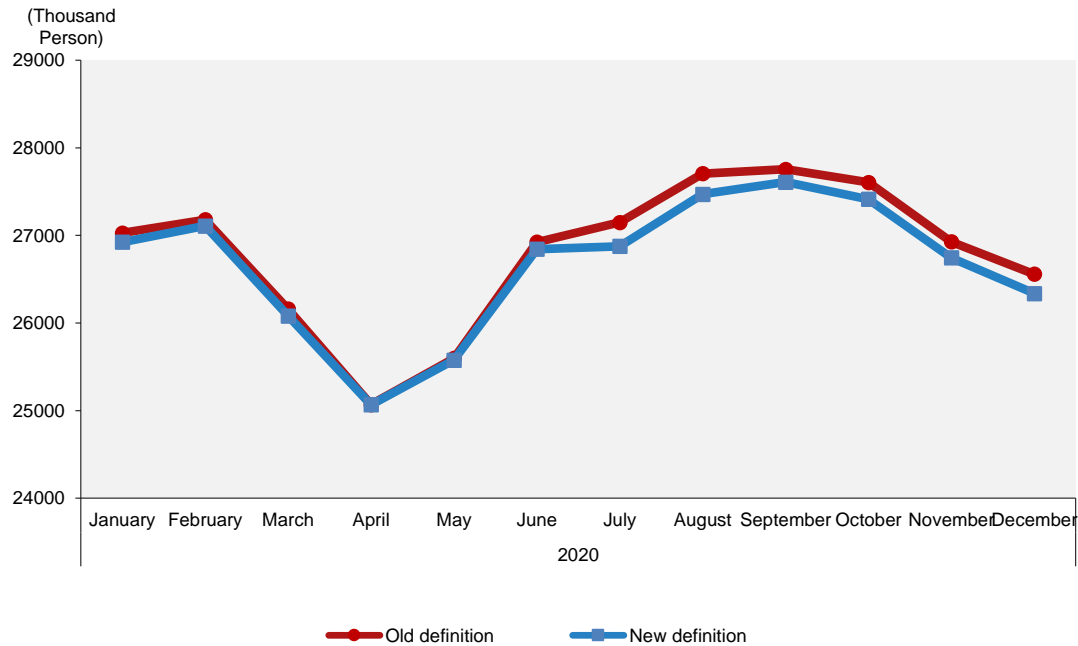
In the LFS questionnaire, all active and passive job search channels are asked one by one to those who do not have a job and are looking for a job. When the profile of the unemployed is analyzed, the number of unemployed people using only passive job search channel is too low to affect the series. The number of people who will be excluded from the unemployed due to this difference in the new definitions is calculated as approximately 20 thousand people for 2020.

- **Differentiation in determining people who are not at work in the reference period, but who have a ‘job attachment’ with her/his job:**

While the old definitions determine people which are employed according to their status in employment, as to the new definitions determines people which are employed according to the reason of absence from work. Normally, this difference in definition does not make a significant difference within the content of employment. However, since the number of people absence from work in pandemic conditions is significantly higher than in previous years, this difference in content has had a greater impact as of the second half of 2020.

While this change in definitions causes a decrease of approximately 60 thousand in total employment in the first half of 2020, this decrease is approximately 200 thousand people in the second half of 2020. According to the analysis studies conducted, the difference between the old and new employment definition (the total effect of all definitions) is shared in the graph below for 2020:

Employed persons according to old and new definition



Monthly indicators produced in 2020 were used for comparison and analysis with current series, and the effect of transition to the new method was observed with the series obtained. Also, in order to ensure the comparability of the produced indicators over time, main labour force indicators were calculated retrospectively until January 2014 using statistical and econometric methods.

4. BACKCASTING METHOD

With the press release, the reference month is January 2021, two important changes have been made in the LFS. In line with the 19th ICLS decisions, the first change is implementation of the changes in the definitions of employment and unemployment, the second is the generation of independent monthly estimates. In order to the labour force indicators to be compatible with the previous series, the effects of these changes were reflected until 2014 and back casting was made.

There are three basic approaches in the literature for the backward estimation of economic time series (UNSTAT, 2018)⁶. These are; "Micro Approach", "Macro Approach" and "Hybrid Approach". Micro approach refers to the recalculation of the time series by reflecting all changes to the data on the micro data. Micro approach is the most reliable method for retrospective estimation of time series, but this method is very costly. Macro approach is used when historical micro-level data cannot be obtained. In macro approach, backward estimation is made by using macro level data. In this approach, time series methods, retropolation and interpolation etc. methods are used. In cases where the number of observations is not sufficient to use time series methods, retropolation or interpolation methods are used. In these methods, time series are estimated backward by using ratios or transformation matrices obtained from macro data.

⁶https://unstats.un.org/unsd/nationalaccount/aeg/2018/M12_8iib_Backcasting.pdf

The ratios or transformation matrices which are used are usually calculated on the basis of data compiled according to both old and new definitions and standards over a period of time. In retropolation approach, while the periodic growth rates of the retrospective old series remain constant, its level changes. On the other hand, in interpolation approach, growth rates of the old series change. In the hybrid approach, micro and macro approaches are used together.

TUIK, used the hybrid approach in the backward estimation of LFS series. The backward estimation process was carried out in four stages. In these stages, micro approach is preferred if there is a possibility to make backward predictions with micro approach. Although the sampling design used between 2014-2019 in the first stage is not suitable for direct estimation on a monthly basis; monthly direct estimates were produced for the relevant years to be used in the retrospective estimation of the series. At this stage, micro method was used. In the second stage, the definition changes related to excluding those who use passive job search methods from the definition of unemployed and excluding those who produce for their own consumption from the content of employment, in the 19th ICLS decisions were reflected retrospectively to the series by micro method. Before 2020, since the sample size was not sufficient to give direct estimates on a monthly basis, it was observed that the series produced at this stage was quite volatile. In the third step, smoother series are obtained by excluding the irregular component that causes volatility in the series.

At this stage, time series methods classified under the macro approach were used. In the fourth stage, the effects of the change in the employment scope and criteria in the ICLS decisions were reflected to the series retrospectively. And the retropolation method, which is classified under the macro approach, was used.

First Stage

The LFS results are published every month since January 2005, based on the moving quarterly data. As a result of the update made in the LFS sampling design as of 2020, instead of the quarterly moving average, each month is enabled to give independent estimates.

Firstly, retrospective monthly direct estimates were produced for the years 2014-2019 by micro-method. When the direct estimates of the previous months were produced, the sampling design applied in the quarterly forecasts before 2020 was also applied on the monthly data and the steps followed are given below.

1. Annual data is divided into monthly data.
2. Pre-calculated initial weights of monthly data and non-response correction were preserved. Since monthly data were not designed on a provincial basis, due to previous design, so the non-response correction was made at the level of NUTS-2 x Rural-Urban.
3. By applying the calibration process (external distribution controls) on monthly data, direct estimates to be used in the model were obtained. During the updated calibration phase, Population Based on Household Size - NUTS Level 2 x Rural-Urban Population and Age Group x Gender Population information was used. Since the sample size targeting monthly estimates may not be sufficient for monthly calibration on a provincial basis, province was not used as a calibration variable in monthly calculations.

Second Stage

Micro approach is used at this stage. In the new ICLS decisions, the definition changes regarding the exclusion of those who use passive job search channels from the definition of unemployed and those who produce for their own consumption from the scope of employment were reflected in the series until 2014. It has been observed that passive job search channel, which express the situation of waiting for an application made to an active job search channel and have a lower share among other methods, cause a small decrease in the number of unemployed. A decrease was observed in employment due to the exclusion of those who produce for their own consumption.

Third Stage

At this stage, a macro approach has been used. Since the sample size was not sufficient to give direct estimates on a monthly basis before 2020, it was observed that the series produced in the second stage were quite volatile. These series are primarily decomposed into trend-cycle, season and irregular components using the TRAMO-SEATS⁷ method. Later, smoother series were obtained by excluding the irregular component causing the volatility in the series.

The quarter averages of the series decomposed from irregular components were benchmarked to the quarterly averages of the series obtained in the second stage by using Chow-Lin (1971)⁸ method. In the benchmarking process, the reason why the quarterly averages of the series obtained in the second stage are taken as basis is that the sample size of these series is reliable in terms of producing quarterly estimates. As a result, at this stage, independent monthly estimates have been obtained until 2014 with reflecting the effects of excluding "passive job search channels" from unemployment and those who "produce for their own consumption" from the content of employment.

Fourth stage

With the 19th ICLS resolutions, the employment criteria which not at work have been changed. While it was decided to consider these persons within the content of employment according to their status of employment, after ICLS resolutions, it is decided according to the reasons of absence from work. At this stage, by using a macro approach, the above mentioned effects were reflected on the series retrospectively until 2014.

The retropolation method was used to estimate the series retrospectively. This method is recommended by UNSTAT (2018) when micro-approach cannot be used. Retropolation method is reflecting the proportional difference between the old and the new series to the series retrospectively with the calculated linking factors. In order to estimate this proportional difference, new questions were added to the questionnaire in January 2020.

⁷Gomez, V. & Maravall, A., (1996), "Programs TRAMO (Time series Regression with Arima noise, Missing observations and Outliers) and SEATS (Signal Extraction in Arima Time Series) Instructions for the User", Documento de Trabajo 9628, Servicios de Estudios, Banco de Espana.

⁸Chow, G. C., & Lin, A. L. (1971). Best linear unbiased interpolation, distribution, and extrapolation of time series by related series. *The review of Economics and Statistics*, 372-375.

Thus, indicators compatible with both old and new definitions and standards were produced. In obtaining the linking factor, in 2020 the months when the Covid-19 pandemic effect was observed in the labour force indicators were excluded. The reason for excluding these months is to not reflect the pandemic effect retrospectively.

As a result of these four stages, the effects of the 19th ICLS decisions and the transition to monthly independent estimates were reflected in the labour force indicators until 2014. Thus, retrospective monthly time series compatible and comparable with the new series were obtained.