HELLENIC REPUBLIC

HELLENIC STATISTICAL AUTHORITY

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PRESS RELEASE

LABOUR FORCE SURVEY: September 2016

The Hellenic Statistical Authority (ELSTAT) announces the seasonally adjusted unemployment rate for September 2016.

- The **seasonally adjusted unemployment rate** in September 2016 was **23.1%** compared to 24.7% in September 2015 and the downward revised 23.3% in August 2016. The number of employed amounted to 3,690,168 persons. The number of unemployed amounted to 1,111,490 while the number of inactive to 3,237,622. The corresponding figures for September 2011 to 2016 are presented in Table 1.

- The **number of employed persons** increased by 60,544 persons compared with September 2015 (a 1.7% rate of increase) and by 5,256 persons compared with August 2016 (a 0.1% rate of increase).

- **Unemployed persons** decreased by 81,013 persons compared with September 2015 (a 6.8% rate of decrease) and by 9,903 persons compared with August 2016 (a 0.9% rate of decrease).

- **Inactive persons,** i.e. persons that neither work neither look for a job, decreased by 17,556 persons compared with September 2015 (a 0.5% rate of decrease) and increased by 1,571 persons compared with August 2016 (negligible change).

Seasonal adjustment is a statistical technique that removes the seasonal component of a time series, making more visible the underlying trend in the change of a characteristic. Users should take into account the fact that seasonal adjustment procedure requires data for many months in order to remove the seasonal component from a time series. As a result, several "observations" (that is a sufficient number of monthly results) are necessary so that the time series reflect a significant change in the trend of employment and unemployment.

The monthly estimates for the number of employed, unemployed and unemployment rate can be subject to revisions in the following months caused by updates to the seasonally adjusted series whenever new monthly data are added, inclusion of the most recent quarterly Labour Force Survey (LFS) data and update of seasonal adjustment model with complete annual data.

Users should also take into account that the first estimates of the most recent monthly unemployment rates are likely to be revised as they are produced with the collected and processed at the time of the press release survey data, which do not coincide with the finally collected and processed sample of the survey. For that reason monthly estimates are revised when the final quarterly estimates are known .
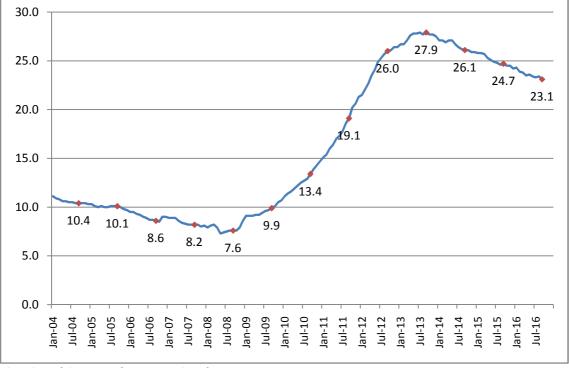
Information:
Population and Labour Market Statistics Division
Labour Force Statistics Section
Stelios Zachariou
Tel: +30 213 135 2173
Fax: +30 213 135 2948
E-mail : *lfs@statistics.gr*

Table 1: Employed, unemployed, economically non-active persons and unemployment rate

	September					
	2011	**2012**	**2013**	**2014**	**2015**	**2016**
Employed	3,972,954	3,611,389	3,505,532	3,551,339	3,629,624	3,690,168
Unemployed	939,716	1,272,150	1,356,351	1,254,676	1,192,503	1,111,490
Inactive	3,385,667	3,345,416	3,312,374	3,317,749	3,255,178	3,237,622
Unemployment Rate	**19.1**	**26.0**	**27.9**	**26.1**	**24.7**	**23.1**

Graph 1: Unemployment rate by month (January 2004 – September 2016)

The values of the curve refer to September of every year

Tables 2 and 3 illustrate unemployment rate by gender and age groups from September 2011 to 2016. Table 4 presents the evolution of unemployment rate during last 15 months by Decentralized Administrations. The complete time series for employed, unemployed and inactive are available on ELSTAT's website.

Table 2: Unemployment rate by gender (September 2011-2016)

Gender	September					
	2011	**2012**	**2013**	**2014**	**2015**	**2016**
Males	16.5	23.0	24.8	23.2	21.3	19.8
Females	22.6	29.9	31.9	29.8	28.9	27.3
Total	**19.1**	**26.0**	**27.9**	**26.1**	**24.7**	**23.1**

Table 3: Unemployment rate by age groups[1] (September 2011-2016)

Age Group	September					
	2011	2012	2013	2014	2015	2016
15-24	47.0	57.1	55.8	50.4	49.1	46.1
25-34	25.8	33.5	36.6	34.6	31.2	30.1
35-44	15.5	22.3	24.3	22.8	22.3	19.1
45-54	13.1	19.4	21.1	19.6	19.8	18.8
55-64	8.2	13.8	16.0	16.3	16.7	17.7
65-74	4.0	7.3	9.5	11.3	10.9	13.7
Total	**19.1**	**26.0**	**27.9**	**26.1**	**24.7**	**23.1**

Table 4: Unemployment rate during July 2015 - September 2016, by Decentralized Administration[2]

Decentralized Administration	7th 2015	8th 2015	9th 2015	10th 2015	11th 2015	12th 2015	1st 2016	2nd 2016	3rd 2016	4th 2016	5th 2016	6th 2016	7th 2016	8th 2016	9th 2016
Macedonia-Thrace	25.3	25.2	25.4	25.0	24.9	24.7	24.7	24.7	24.4	24.3	24.0	23.5	24.5	24.1	23.2
Epirus-Western Macedonia	28.0	27.7	28.0	27.9	27.5	28.3	28.2	28.4	28.3	27.5	27.4	26.7	26.1	26.2	26.1
Thessaly – Sterea Ellas	26.4	26.7	26.7	26.8	27.6	27.3	29.2	26.5	26.4	25.9	25.0	24.8	24.6	25.2	25.4
Peloponnese, Western Greece & Ionian Islands	25.6	24.4	24.2	23.8	24.1	23.3	23.6	23.0	23.7	23.6	23.9	23.3	22.8	23.2	23.2
Attica	24.7	24.7	25.1	24.8	24.1	23.6	23.6	23.3	23.0	22.6	22.6	23.1	23.0	22.9	22.3
Aegean Islands	16.4	15.6	14.0	14.6	12.9	14.8	14.7	15.1	16.1	16.2	20.6	18.4	19.8	19.7	19.2
Crete	24.4	23.5	23.9	25.1	25.5	25.0	25.5	25.3	23.4	22.9	21.4	22.0	22.0	22.2	23.2
Greece, Total	**24.8**	**24.6**	**24.7**	**24.5**	**24.5**	**24.2**	**24.3**	**23.9**	**23.8**	**23.5**	**23.6**	**23.5**	**23.3**	**23.3**	**23.1**

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[1] Estimates of "rare" characteristics, that is estimates of characteristics that refer to 10.000 persons or less are accompanied by large sampling errors, as for example in the case of unemployment rate in the age group of 65 – 74 years old

[2] Decentralized Administrations are the lowest geographical areas for which the Labour Force Survey (LFS) publishes estimates. LFS results are not published at lower level (NUTS 2 or NUTS 3) because, due to small population and sample size, estimates in these areas have large sampling errors. It should be noted that the same problem of small populations and sample sizes exist also in certain Decentralized Administrations and as a result, estimates in these areas have large sampling errors

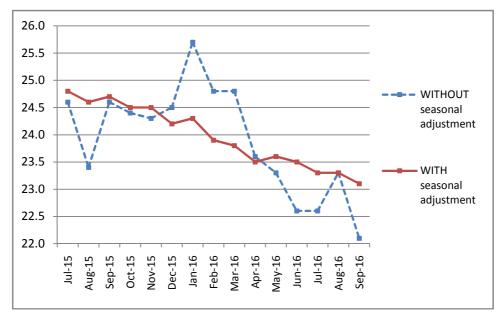# The effect of seasonal adjustment on the estimates of Labour Force Survey

The characteristics surveyed by Labour Force Survey (number of employed, unemployed, etc.) have large seasonal variation. For example, in Greece, employment increases during summer months because of tourism (if there are no other countervailing factors).
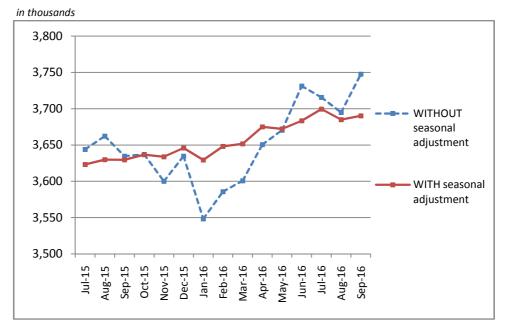
Table 5 presents the change in monthly estimates of employed and unemployed because of seasonal adjustment for the period July 2015 – September 2016 while Graphs 2, 3 and 4 present adjusted and unadjusted time series for employed persons, unemployed persons and the rate of unemployment for the same period.

Table 5: Change in monthly estimates of employed and unemployed persons due to seasonal adjustment

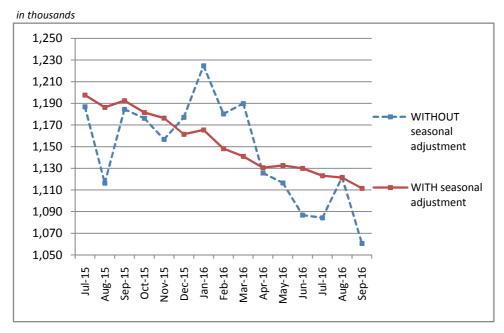|	Estimated number of employed <u>without</u> seasonal adjustment (in thousands)	Change due to seasonal adjustment (in thousands)	Change (%)	Estimated number of unemployed <u>without</u> seasonal adjustment (in thousands)	Change due to seasonal adjustment (in thousands)	Change (%)
July 2015	3,643.9	-20.8	-0.6	1,186.9	10.8	0.9
August	3,662.2	-32.5	-0.9	1,116.4	69.9	6.3
September	3,634.6	-5.0	-0.1	1,184.5	8.0	0.7
October	3,637.1	-0.5	0.0	1,176.3	5.2	0.4
November	3,600.1	33.7	0.9	1,156.8	19.6	1.7
December	3,634.6	11.2	0.3	1,177.1	-15.6	-1.3
January 2016	3,548.2	81.1	2.3	1,224.7	-59.3	-4.8
February	3,585.7	62.4	1.7	1,180.2	-32.1	-2.7
March	3,600.7	50.8	1.4	1,189.9	-48.8	-4.1
April	3,650.5	24.4	0.7	1,125.7	4.9	0.4
May	3,670.4	1.6	0.0	1,116.6	16.1	1.4
June	3,731.1	-47.7	-1.3	1,086.9	43.1	4.0
July	3,715.5	-16.0	-0.4	1,084.3	38.9	3.6
August	3,694.8	-9.9	-0.3	1,121.7	-0.3	0.0
September 2016	3,747.5	-57.3	-1.5	1,060.7	50.8	4.8

Graph 2: Unemployment Rate - Adjusted and Non-adjusted Estimates

Graph 3: Number of Employed Persons - Adjusted and Non-adjusted Estimates

in thousands

Graph 4: Number of Unemployed Persons - Adjusted and Non-adjusted Estimates

in thousands

Revisions of monthly estimates

The monthly estimates for the number of employed, unemployed and unemployment rate can be subject to revisions in the following months caused by updates to the seasonally adjusted series whenever new monthly data are added, inclusion of the most recent quarterly LFS data and update of seasonal adjustment model with complete annual data. In the current press release the estimation of unemployment rate for the period July 2015 – August 2016 has been revised (compared to the estimation published in the previous press-release) as follows:

Table 6	Seasonally adjusted unemployment rate	
	Estimations published November 2016 (Monthly results for August 2016)	Estimations published in the current press release (Monthly results for September 2016)
July 2015	24.8	24.8
August	24.6	24.6
September	24.7	24.7
October	24.5	24.5
November	24.5	24.5
December	24.2	24.2
January 2016	24.3	24.3
February	23.9	23.9
March	23.8	23.8
April	23.5	23.5
May	23.6	23.6
June	23.4	23.5
July	23.3	23.3
August	23.4	23.3
September 2016	-	23.1

Labour Force Survey   Labour Force Survey produces estimates since 1981 (second quarter of the year). From 1998 onwards it is a continuous quarterly survey. The main statistical objectives of the Labour Force Survey is to divide the population of working age (15 years and over) into three mutually exclusive and exhaustive groups - persons in employment, unemployed persons and inactive persons. In addition, the Labour Force Survey collects information on demographic characteristics, on main job characteristics, on the existence and characteristics of a second job, on educational attainment, on participation in education, on previous working experience and on search of job.

Legislation   The current survey is completely harmonized with European legislation. The principal legal act is the Council Regulation (EC) No. 577/98 that stipulates the provisions on design, survey characteristics and decision-making processes.

Reference Period   The sample of Labour Force Survey is equally allocated to the 4 (or 5) weeks of the month. Every selected household is assigned to a specific week, the reference week, running from Monday to Sunday.

Coverage   For the monthly estimates, a sub-sample of the quarterly Labour Force survey's sample was used.

Definitions   **Employed** are persons aged 15 years or older, who during the reference week worked, even for just one hour, for pay or profit or they were working in the family business, or they were not at work but had a job or business from which they were temporarily absent.

Unemployed are persons aged 15-74 who were without work during the reference week (they were not classified as employed), were currently available for work and were either actively seeking work in the past four weeks or had already found a job to start within the next three months.

Inactive are those persons who are neither classified as employed nor as unemployed.

Economically active population (labour force) are persons either employed or unemployed.

Unemployment Rate is the ratio of unemployed divided by total labour force.

Seasonal adjustment   Seasonal adjustment is a statistical technique that removes the seasonal component of a time series, making more visible the underlying trend in the change of a characteristic. Hellenic Statistical Authority is using Demetra 2.0 for seasonal adjustment. Seasonally adjusted series are produced by TRAMO&SEATS algorithm. It should be noted that due to seasonal adjustment the whole series with monthly estimates is recalculated every time a new month is added in time series. As a result, estimations for the previous months are often revised.

Sampling errors   The monthly results of Labour Force Survey are estimations that are based in a relatively small sample size and have large sampling errors. An indication of the magnitude of survey's sampling errors is that estimations of characteristics that refer to 25,000 persons at the total country are accompanied by a coefficient of variation of at least 15%. More accurate estimates and detailed analysis of the changes in employment can be based on the quarterly results of the survey.

Methodology   Labour Force Survey's estimates are produced by a suitable unbiased estimator which takes in to account a) the probability of selection of every sampled household, b) the response rate in every primary sampling unit, c) the estimated population, for the corresponding month, allocated by NUTS II areas, gender and age group.

References   Analytical description of the Labour Force Survey's methodology and definitions can be found at http://www.statistics.gr/en/statistics/-/publication/SJO02/-