METHODOLOGICAL NOTE ON THE ESTIMATED MIGRATION FLOWS OF 2018 AND THE ESTIMATED POPULATION ON 1.1.2019

BACKGROUND

This note presents the first estimates of migration flows for 2018 upon which the estimated population on 1.1.2019 is based. As regards immigration flows, the model to be applied is the same as the one outlined in the note entitled "Short methodological note on the estimated migration flows and the estimated population 1991-2014". The note is available at the following link:

http://www.statistics.gr/documents/20181/a483cf24-b563-4ef8-8ae9-d502d7d21675.

In this estimation people living in the country due to the refugee crisis is added.

The estimation of emigration is based upon data on immigrants from Greece to Germany, as reported by the German Statistical Office (DESTATIS), given that neither the Greek Ministry of Foreign Affairs nor any other country disposes any relevant data. Knowing that Germany is the more popular destination country for Greek emigrants, the data of Germany are used by applying regression models.

IMMIGRATION

Using the aforementioned note on estimating immigration flows for the years 1991-2014 and taking also into consideration the advantages and disadvantages of the examined models, a model with two independent variables was selected, namely immigration of the previous year and the percentage change of Gross Domestic Product (GDP) for the previous year, as well.

The formula is as follows:

$$\ln(X_t) = 3.219 + 0.711 * \ln(X_{t-1}) + 0{,}008 * Z_{t-1} \qquad (1)$$

where,

X_t: Total annual immigration

X_{t-1}: Total annual immigration (previous year)

Z_{t-1}: percentage change of Gross Domestic Product (previous year)

If $\mathbf{X_{2017}}$ = 63,989 and $\mathbf{Z_{2017}}$ = 2.11,

the estimated immigration for 2018 is: $\mathbf{X_{2018}}$=66,447.

In addition to this number, there will be 53,042 persons related to the refugee crisis living in the country at 1.1.2019 and in accordance to the preconditions of the Regulation of the E. Parliament and of the Council (EC) 862/2007 on Community statistics on migration and international protection are considered as immigrants. Therefore, the number of total immigration for 2018 is estimated **119,489.**

Estimated immigrants are disaggregated by sex, age, group of citizenship/country of birth/country of previous residence according to the figures of the 2011 Population Census. Persons living in the Country due to the refugee crisis are allocated according to administrative data from Asylum Service and the Ministry of Migration Policy.

EMIGRATION

Estimates for the years 1991 – 2013 were produced on the basis of the results of the MIMOSA projects and immigration data of other countries. These estimates are included in the previously published study "Short methodological note on the estimated migration flows and the estimated population 1991-2014".

For the years from 2014 onwards the model to be applied is outlined in the note "Methodological note on the migration flows 2014 and the estimated population on 1.1.2015". The note is available at the following link:

http://www.statistics.gr/en/statistics?p_p_id=documents_WAR_publicationsportlet_INSTANCE_

A regression model, on the basis of available data on immigrants from Greece to Germany, as reported by the German Statistical Office DESTATIS, was selected.

The regression formula that was selected is the following:

$$\mathbf{E_t = 6755{,}205 + 3.157393 * D_t}$$

where $\mathbf{E_t}$ is t total emigration during the year **t** and $\mathbf{D_t}$ is data on migration from Greece to Germany for the same year according to DESTATIS.

By applying the regression formula to the 30,498 immigrants from Greece to Germany according to Destatis data for 2018, the resulting estimate for total emigrants is **103,049**.
For disaggregation by sex and age for emigrants, German data on immigration from Greece were also used.

ESTIMATED POPULATION ON 1.1.2019

On the basis of the demographic equation $P_{t+1} = P_t + B_t - D_t + I_t - E_t$,
where,
P_{2018} = 10,741,165 (population 1.1.2019)
B_{2018} = 86,440 live births
D_{2018} = 119,446 deaths (usual residents abroad excluded)
I_{2018} = 119,449 (immigrant's estimation)
E_{2018} = 103,049 (emigrant's estimation)

the estimated population on 1.1.2019 is thus: **P_{2019} = 10,724,599**.