

## Methodological Summary on the Break Correction for Slovakia

The main goal of the break in time series exercise was to assess the possible break caused by the implementation of the IESS FR and of the 19th ICLS resolution as regards the measurement of employment and unemployment from 2021, introduction of the new flowchart and calculation of the correction factors for 14 main indicators.

Of the suggested approaches, the pilot survey was chosen for estimation of the impact of the break in Slovakia. The pilot survey ran independently from the national 2020 LFS. The sample for the pilot survey was prepared with the same methodology as was planned for the LFS under the IESS FR. In addition, the data collection mode, the rules for proxy, the imputation rules. The weighting of pilot data set was performed with the same method as is using from 2021. From 2021, the new weighting method using population without institutional households was introduced in LFS. Base on pilot data 2020 and core LFS data 2020 we calculated pilot correction factors.

In 2020, Covid-19 had a negative impact not only on data collection but also affected the situation on labour market. Compared core LFS 2020 data with 2019, the employment in all main indicators decreased and the unemployment in almost all main indicators raised. In order to minimize the distortion of the correction factors by the covid-19, we analysed the quality of the pilot correction factors and their reflection of the main IESS methodological changes. For this reason, we adjusted 2020 core LFS data (by EU- LFS methodology before 2021) by main methodological changes of the new method and compared it with LFS pilot data. For all main indicators we recalculated 2020 LFS data in all quarters by:

1. New weighting scheme on population without collective households separately,
2. Main conceptual changes concerning the employment status (people on parental leave and activation works) separately. Out of employed we excluded persons on activation works and on the contrary we added persons on parental leave. Into the group of unemployed, we added persons on activation works who fulfilled the ILO unemployment definition (persons searching for employment able to start working within 2 weeks),
3. New method with new weighting scheme and main conceptual changes together (in order to see overall effect).

In order to assess the impact of introduction of the new flowchart on the time series, in pilot data we also analysed the changes in sub module at work, submodule absences from work, introduction of sub module small or causal jobs and the change employment status of the persons on parental leave and persons on activation works. On the other hand, we supposed that slight changes concerning sub module search for employment, sub module availability to work and submodule active job search methods should not lead to considerable breaks in unemployment time series.

The coronavirus pandemic started affecting present life for the whole country since March 2020 and influenced data collection of the household's surveys. From March to May 2020 all face to face interviews were forbidden due to pandemic precautions and the non-response rate started to sharply increase. The huge increase of non-response rate in pilot survey

caused the problem with sample representativeness and affected the data behaviour more as was expected. Although the minimal required sample size of the pilot sample was fulfilled, the pilot studies showed that it was insufficient to assess the impact of breaks in the time series due to introduction of the IESS FR as regards the comparability for the employment and unemployment. The significantly higher weights negatively affect the minority group of respondents in the small samples, and only a little change has impact on the significant increase or decrease the level of the data.

In order to minimize this effect, we decided to calculate model correction factor based on recalculation of the 1<sup>st</sup> quarter 2020 LFS data by new method with new weighting scheme and main conceptual changes (i.e. change of employment status of persons on parental leave and persons on activation works).

**Model employment correction factors:**

*Employment CF*

$$= \frac{\text{Employed persons 1q2020} - \text{persons on activation works} + \text{persons on parental leave} \\ \text{(recalculated by new weighting scheme and without collective households)}}{\text{Employed persons 1q2020}} \\ \text{(by EU - LFS methodology before 2021)}$$

**Model unemployment correction factor:**

*Unemployment CF*

$$= \frac{\text{Unemployed persons 1q2020} + \text{persons on activations works fullfilling unemployment definition} \\ \text{(recalculated by new weighting scheme and without collective households)}}{\text{Unemployed persons 1q2020}} \\ \text{(by EU - LFS methodology before 2021)}$$

Due to negative impact of the pandemic from March 2020 in model correction factors, we decided to use only the first quarter 2020 (as coronavirus pandemic affected the core LFS data in this quarter the least).

Taking into the consideration the pilot studies, we suppose quarterly pilot correction factors as unsuitable for using. The negative impact of the small sample size with higher weights and the extremely high non-response rate in pilot survey in the 1<sup>st</sup> quarter and 2<sup>nd</sup> quarter 2020 (due to pandemic) deformed the quarterly pilot correction factors and therefore would distort time series backwards. For this reason we decided to use the model correction factors. In Slovak condition, the model correction factors based on the 1<sup>st</sup> quarter 2020 LFS explain breaks in time series due to implementation of the IESS FR the best and we strongly recommend to use them.